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Dairy Herd Improvement Letter

Vol. 59, No. 5



DEC 26 '84

December 1983

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U.S. Department of Agriculture
Agricultural Research Service

Agricultural Research Service, Dairy Herd Improvement Letter, Vol. 59, No. 5,
December 1983

Published by Northeastern Region, Agricultural Research Service, U.S. Department of
Agriculture, Beltsville, Md. 20705

Dairy Herd Improvement Letter

USDA SUMMARY OF 1982 U.S. COW HERD AVERAGES

By Gerald J. King and George R. Wiggans¹

The U.S. Department of Agriculture (USDA) received 60,384 cow herd records for 1982 from 9 dairy records processing centers (DRPC's). These DRPC's process records of cows enrolled in the National Cooperative Dairy Herd Improvement Program (NCDHIP). Records from 37,597 herds, including 3,182,229.6 cow-years, on official NCDHIP test passed USDA edits (see appendix) and are summarized in this report. Records from 21,938 herds, including 1,215,129.5 cow-years, on nonofficial NCDHIP test also are summarized. Cow-years are calculated by dividing all days on test, including dry days, by 365. For 1982, records for 179,524.0 more cow-years and 1,502 more herds were summarized than for 1981. The number of cows represented in herd averages is closer to the number of cows enrolled in NCDHIP than in previous years because of the lower rate of increase in enrollment last year.² The numbers of cow-years and herds included are less than total enrollment primarily because a herd must be on test for 365 days to have a herd-average record.

Tables 1-2, 6-8, and 10 include information on milk yield for all herds and on fat or protein yield for herds with fat or protein yield reported that is within limits (see appendix). Records for 16,197 herds with 1,129,522.1 cow-years had acceptable protein data. Solids-not-fat (SNF) yield was summarized (table 3), and 713 herds with 238,827.4 cow-years had acceptable SNF data. The sharp increase in herds and cows with protein or SNF yields reported is due in part to changes in the editing limits imposed on the data. This year all DRPC's restricted data on protein or SNF testing to data from herds on component testing for the entire test year, which made easing the limits appropriate.

Information on amount of feed, feed cost, and income, in addition to milk and fat yields, was reported only by the Iowa, New York, North Carolina, and Pennsylvania DRPC's. Therefore, records with feeding and other information were available only for slightly less than half the total number of herds summarized. Records with missing or unreasonable amounts of feed, feed costs, or value of product also were not included in averages for herd records with feeding and other information contained in table 4.

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² Norman, H. D., Myers, E. F., and Dickinson, F. N. National Cooperative Dairy Herd Improvement Program participation report--State activities as of January 1, 1983. U.S. Dept. Agr. Dairy Herd Impr. Ltr. 59(3), 28 pp. 1983.

Herd and cow-year numbers and averages reported in State newsletters may differ from values reported here because of differences in limits or reporting periods.

State Averages for Milk Production

Table 1 summarizes all official records for milk, fat, and protein. No records for herds enrolled in official plans were reported for the Virgin Islands. There were 907 more herds and 134,969.6 more cow-years summarized in 1982 than in 1981, with an average milk yield of 15,274 pounds in 1982 compared with an average of 15,134 pounds in 1981. The number of cow-years per herd averaged 84.6. California again had the highest average milk yield with 1,278 herds averaging 16,929 pounds. Washington was second with 621 herds averaging 16,921 pounds; New Mexico, third with 59 herds averaging 16,894 pounds; and Arizona, fourth with 122 herds averaging 16,576 pounds. Thirty-five States had average milk yields above 14,000 pounds, the same number as for 1981.

Average fat yield for herds with records passing edits for fat yield or percentage (records from 49 herds were eliminated) was 564 pounds, 6 pounds more than in 1981, and average fat percentage was 3.69, 0.01 higher than in 1981. Herds with protein data included 779,172.7 cow-years (24 percent of all official cow-years) and averaged 15,444 pounds of milk, 575 pounds of fat, and 506 pounds of protein (3.27 percent).

Table 2 summarizes all nonofficial records for milk, fat, and protein. Puerto Rico, Rhode Island, and Wyoming had no nonofficial records summarized. There were 595 more herds and 44,554.5 more cow-years summarized in 1982 than in 1981. The average number of cow-years per herd was 55.4. Cows on nonofficial test averaged 14,138 pounds of milk compared with 14,101 pounds in 1981. Alaska again had the highest average milk yield with 1 herd averaging 16,949 pounds. Washington was second with 70 herds averaging 15,619 pounds; Idaho, third with 35 herds averaging 15,408 pounds; and California, fourth with 97 herds averaging 15,349 pounds. Thirty-three States (3 less than for 1981) had average milk yields for nonofficial herds above 13,000 pounds.

Records from 353 herds did not include fat production. Average fat yield was 534 pounds for those herds reporting fat yield, 4 pounds more than in 1981, and average fat percentage was 3.76, 0.02 higher than in 1981. Records with protein data were from 350,349.4 cow-years (29 percent of all nonofficial cow-years) and averaged 14,532 pounds of milk, 542 pounds of fat, and 461 pounds of protein (3.17 percent).

Table 3 is a summary of SNF records reported for both official and nonofficial plans. Nine States--Alaska, California, Idaho, Iowa, Montana, Nevada, North Dakota, Oregon, and Utah--reported records that passed edits, with an average SNF of 1,524 pounds (8.83 percent). California leads the group with 685 herds.

State Averages for Records With Feed, Cost, and Value Information

Table 4 is a summary of herds on official test for which feed, feed cost, and value of product were reported. Official herds averaged 73.4 cow-years per herd, 0.9 more than in 1981, with 14,583 pounds of milk compared with 14,548 in 1981 and 535 pounds of fat, the same as for 1981. Average value of product was \$1,992 and

average feed cost was \$773, which resulted in an average income over feed cost for official records of \$1,218, \$10 higher than in 1981.

Table 5 is a summary of herds on nonofficial test for which feed, feed cost, and value of product were reported. Nonofficial herds averaged 61.7 cow-years per herd, 0.3 more than in 1981, with 13,896 pounds of milk compared with 13,954 in 1981 and 449 pounds of fat compared with 512 in 1981. Average value of product was \$1,878 and average feed cost was \$723, which resulted in an average income over feed cost for nonofficial records of \$1,155, \$5 lower than in 1981.

For some of the herds summarized, the total ration did not include all four types of feed (concentrates, succulent forage, dry forage, and pasture). However, the averages for feed, cost, and value of product were calculated from all herds for which feeding information was reported. The averages reflect the contribution of each feed to the total ration. The national percentage of cows fed each feed is included in the footnotes for each table.

Breed Averages

Table 6 summarizes averages by breed and type of plan. Holsteins comprise 88.5 percent of herds and 91.7 percent of cow-years in official plans; they comprise 93.6 percent of herds and 95.5 percent of cow-years in nonofficial plans. Compared with 1981, only three breeds and the mixed-breed group increased in numbers of herds, with Holsteins increasing the most.

Table 7 summarizes herds by milk level within breed for all official and nonofficial records. For Holsteins, the modal group for milk yield was 15,000-15,999 pounds (the same as for 1981) with 9,119 herds. The highest milk yield for any herd was 25,150 pounds for a Holstein herd. In table 8, herds are summarized by herd size within breed for all official and nonofficial records. For Holsteins, the modal group was 25-49.9 cows per herd (the same as for 1981) with 21,383 herds.

Test Plan Averages

Table 9 summarizes herds and cow-years by breed within type of test. For all breeds except Brown Swiss and Milking Shorthorn, the most herds and cow-years were enrolled in DHI. For Brown Swiss and Milking Shorthorns, the most herds and cow-years were enrolled in DHIR; DHIR also was the second largest plan for Ayrshires and Jerseys for herds and cow-years and for Guernseys for cow-years. The DHI plan was second largest for Brown Swiss and Milking Shorthorns. The OS plan was second largest for Holsteins, Guernseys, Red and Whites, and mixed breeds for herds and for Holsteins and Red and Whites for cow-years.

Table 10 summarizes records with milk, fat, and protein by testing plan. Increased enrollment in DHI AP plans, DHIR, OS-AP, and SS-AP was responsible for most of the increase in number of herds from 1981 to 1982. Only DHI and OS had major decreases in number of herds enrolled.

Three-Times-a-Day Milking

Number and percentage of herds and cows milked three times a day (3X) are in table 11 as reported by the DRPC's. For 1982, all DRPC's but Pennsylvania included information on 3X milking in their herd-average records. Herds milked 3X are usually large as indicated by the difference between the percentages of herds and cow-years. The latter is over twice the former. Milking 3X is most frequent in the Western States.

Summaries Over Years

Tables 12-16 summarize cow-year data for official and nonofficial plans by test year. Cow-year totals and averages for milk and fat are summarized by test year from 1939-40 to 1982 for all official herd records in table 12 and for all official herd records with feeding and other information in table 13. Cow-year totals and averages for milk and fat are summarized by test year from 1962-63 to 1982 for all nonofficial herd records in table 14 and for all nonofficial herd records with feeding and other information in table 15. Table 16 compares yield of cows on official test, cows on nonofficial test, and all other cows by test year from 1962-63 to 1982. In 1982, cows in official plans produced 5,039 pounds more milk and cows in nonofficial plans, 3,972 pounds more milk than did cows not enrolled in NCDHIP.

Table 17 summarizes yield and value of product for all cows in the United States as estimated by the Statistical Research Service, USDA.

Appendix

The following edits were applied by USDA to 1982 herd-average data:

Characteristic:	<u>Acceptable values</u>
Record code -----	All codes except 9
Year-----	1982
State -----	U.S. State and territory prefix codes
Herd size-----	5 or more cow-years
Milk (pounds)-----	4,000-28,000 unless verified
Fat (pounds)-----	92-1,200 unless verified
Fat (percent):	
Ayrshire -----	2.7-6.0
Brown Swiss -----	2.7-6.0
Guernsey-----	3.3-6.7
Holstein-----	2.5-5.0
Jersey-----	3.3-7.3
Milking Shorthorn -----	2.7-5.9
Other breeds-----	2.5-7.3
Protein (pounds) -----	60-1,050
Protein (percent) -----	2.5-4.5
SNF (pounds)-----	322-2,300
SNF (percent)-----	8.1-10.2
Concentrate (cwt) -----	0-180 unless verified
Succulent forage (cwt) -----	0-475
Dry forage (cwt)-----	0-200
Pasture (days)-----	0-366
Cost of concentrate per cwt -----	\$1.20-\$12
Value of product-----	\$260-\$3,800
Feed cost per cwt of milk-----	\$1.25-\$11 (Total feed cost cannot be greater than value of product.)

Table 1.--State and national cow-year totals and averages for all official herd records for milk, fat, and protein, 1982

State ¹	Records with milk			Records with fat					Records with protein					
	Herds	Cow-years	Milk	Herds	Cow-years	Milk	Fat	Fat	Herds	Cow-years	Milk	Fat	Protein	Protein
	Number	Number	Pounds	Number	Number	Pounds	Percent	Pounds	Number	Number	Pounds	Pounds	Percent	Pounds
Alabama-----	193	23,909.8	13,284	193	23,909.8	13,284	3.69	490	16	2,175.4	12,515	520	3.57	447
Alaska-----	1	66.4	14,438	1	66.4	14,438	3.68	531	---	---	---	---	---	---
Arizona-----	122	49,904.8	16,576	122	49,904.8	16,576	3.85	639	---	---	---	---	---	---
Arkansas-----	190	12,470.9	13,042	188	12,387.0	13,056	3.52	459	2	179.5	13,090	492	3.47	454
California-----	1,278	483,036.8	16,929	1,278	483,036.8	16,929	3.71	627	52	11,325.9	12,605	596	3.70	467
Colorado-----	224	30,534.5	15,325	224	30,534.5	15,325	3.62	555	204	27,688.5	15,396	558	3.39	522
Connecticut-----	284	23,915.2	16,100	284	23,915.2	16,100	3.68	593	37	2,378.2	16,065	595	3.29	529
Delaware-----	46	4,220.6	16,425	46	4,220.6	16,425	3.73	613	3	113.4	15,158	622	3.22	488
Florida-----	66	19,906.7	13,604	61	18,344.6	13,589	3.34	454	3	524.1	10,127	409	3.67	371
Georgia-----	310	38,472.3	13,508	302	37,041.8	13,523	3.61	488	32	3,800.7	12,898	468	3.35	432
Hawaii-----	7	3,750.4	13,127	7	3,750.4	13,127	3.21	421	---	---	---	---	---	---
Idaho-----	477	49,054.3	15,163	477	49,054.3	15,163	3.63	550	222	21,726.6	14,992	549	3.24	486
Illinois-----	1,159	69,766.9	14,374	1,159	69,766.9	14,374	3.69	530	31	1,443.3	13,548	548	3.43	465
Indiana-----	889	55,084.4	14,758	889	55,084.4	14,758	3.76	555	418	27,044.0	14,508	544	3.28	476
Iowa-----	1,342	70,286.5	14,171	1,342	70,286.5	14,171	3.72	527	77	3,879.8	13,061	533	3.48	455
Kansas-----	708	48,861.1	13,950	708	48,861.1	13,950	3.61	504	---	---	---	---	---	---
Kentucky-----	501	33,005.3	13,271	501	33,005.3	13,271	3.70	491	34	2,158.1	11,691	512	3.61	422
Louisiana-----	276	28,539.4	12,332	275	28,484.0	12,326	3.52	434	---	---	---	---	---	---
Maine-----	422	22,810.5	15,569	422	22,810.5	15,569	3.66	570	34	1,887.0	15,088	620	3.54	534
Maryland-----	608	53,250.4	14,924	608	53,250.4	14,924	3.67	548	6	756.3	16,983	629	3.20	543
Massachusetts----	309	18,064.5	15,294	309	18,064.5	15,294	3.75	574	38	2,152.3	15,001	596	3.39	509
Michigan-----	1,503	121,566.0	15,680	1,485	120,082.0	15,736	3.67	578	55	3,751.0	15,253	588	3.36	513
Minnesota-----	4,418	229,488.5	14,894	4,418	229,488.5	14,894	3.72	555	---	---	---	---	---	---
Mississippi-----	272	27,127.1	12,500	272	27,127.1	12,500	3.62	453	---	---	---	---	---	---
Missouri-----	826	55,724.4	13,778	826	55,724.4	13,778	3.64	501	---	---	---	---	---	---
Montana-----	107	9,139.2	14,643	107	9,139.2	14,643	3.57	523	17	1,516.2	14,138	497	3.33	471
Nebraska-----	461	31,568.1	13,205	461	31,568.1	13,205	3.69	487	2	95.1	12,822	515	3.44	441
Nevada-----	36	10,489.2	15,614	36	10,489.2	15,614	3.70	577	1	268.2	13,135	653	3.59	472
New Hampshire----	216	13,231.6	15,461	216	13,231.6	15,461	3.74	578	53	2,964.3	15,274	599	3.41	521
New Jersey-----	189	14,394.8	15,931	189	14,394.8	15,931	3.67	585	189	14,394.8	15,931	585	3.25	518
New Mexico-----	59	31,733.0	16,894	59	31,733.0	16,894	3.58	605	2	492.2	11,889	434	3.49	415
New York-----	2,893	208,474.0	15,872	2,893	208,474.0	15,872	3.67	583	2,889	208,161.6	15,869	583	3.22	510
North Carolina----	603	65,406.5	15,293	596	64,613.9	15,302	3.56	545	31	2,898.9	14,529	589	3.54	515
North Dakota-----	144	9,451.4	13,027	144	9,451.4	13,027	3.58	467	2	122.1	12,964	495	3.38	439
Ohio-----	1,602	100,510.4	15,294	1,602	100,510.4	15,294	3.76	575	711	44,408.3	15,224	578	3.13	477
Oklahoma-----	276	21,795.6	13,969	276	21,795.6	13,969	3.61	505	7	433.1	12,202	494	3.68	449
Oregon-----	361	41,639.1	15,805	361	41,639.1	15,805	3.78	597	186	21,450.2	16,225	609	3.29	534
Pennsylvania-----	3,822	224,770.1	15,526	3,822	224,770.1	15,526	3.72	577	181	10,574.6	14,691	581	3.34	491
Puerto Rico-----	168	31,027.8	8,916	163	30,140.4	8,854	3.06	271	---	---	---	---	---	---
Rhode Island-----	23	1,360.6	14,162	23	1,360.6	14,162	3.70	523	---	---	---	---	---	---
South Carolina----	216	30,330.7	13,842	215	30,199.0	13,831	3.88	537	26	4,289.6	12,487	550	3.71	463
South Dakota-----	268	17,363.2	13,613	268	17,363.2	13,613	3.64	495	4	266.2	12,693	476	3.41	433
Tennessee-----	665	60,422.5	14,053	665	60,422.5	14,053	3.68	516	---	---	---	---	---	---
Texas-----	583	80,381.8	14,072	581	80,131.8	14,074	3.61	508	570	76,696.5	13,984	505	3.41	476
Utah-----	354	40,499.1	16,121	354	40,499.1	16,121	3.49	562	351	40,140.3	16,121	562	3.26	525
Vermont-----	966	57,307.7	14,881	966	57,307.7	14,881	3.71	552	148	7,185.4	14,542	572	3.39	492
Virginia-----	923	88,600.6	15,166	923	88,600.6	15,166	3.61	547	---	---	---	---	---	---
Washington-----	621	86,159.3	16,921	621	86,159.3	16,921	3.65	618	620	86,030.7	16,924	618	3.29	556
West Virginia-----	162	12,701.2	14,407	162	12,701.2	14,407	3.61	520	1	67.3	12,388	555	3.87	480
Wisconsin-----	5,422	318,171.3	15,435	5,422	318,171.3	15,435	3.80	587	2,452	141,994.4	15,463	590	3.23	499
Wyoming-----	26	2,483.1	14,136	26	2,483.1	14,136	3.56	503	20	1,738.6	14,103	500	3.37	475
United States-----	37,597	3,182,229.6	15,274	37,548	3,175,552.0	15,280	3.69	564	9,727	779,172.7	15,444	575	3.27	506

¹ Includes Puerto Rico.

Table 2.--State and national cow-year totals and averages for all nonofficial herd records for milk, fat, and protein, 1982

State	Records with milk			Records with fat					Records with protein					
	Herds	Cow-years	Milk	Herds	Cow-years	Milk	Fat	Fat	Herds	Cow-years	Milk	Fat	Protein	Protein
	Number	Number	Pounds	Number	Number	Pounds	Percent	Pounds	Number	Number	Pounds	Pounds	Percent	Pounds
Alabama-----	6	702.3	13,795	5	439.9	13,434	3.64	489	1	31.8	13,225	462	3.14	415
Alaska-----	1	74.9	16,949	1	74.9	16,949	3.40	577	---	---	---	---	---	---
Arizona-----	5	973.8	9,400	5	973.8	9,400	3.55	334	---	---	---	---	---	---
Arkansas-----	38	4,002.3	14,287	38	4,002.3	14,287	3.56	508	---	---	---	---	---	---
California-----	97	34,168.9	15,349	97	34,168.9	15,349	3.71	569	2	82.2	14,145	541	3.14	445
Colorado-----	16	3,156.4	14,348	16	3,156.4	14,348	3.72	533	12	1,863.9	14,384	529	3.42	492
Connecticut-----	33	3,115.0	14,661	33	3,115.0	14,661	3.62	530	---	---	---	---	---	---
Delaware-----	3	389.3	14,846	3	389.3	14,846	3.66	544	---	---	---	---	---	---
Florida-----	102	39,620.7	12,855	1	86.0	12,611	3.56	449	---	---	---	---	---	---
Georgia-----	107	17,170.1	12,974	10	667.6	14,150	3.48	493	1	83.3	12,936	498	3.12	403
Hawaii-----	6	3,829.4	13,589	6	3,829.4	13,589	3.42	465	---	---	---	---	---	---
Idaho-----	35	5,965.8	15,408	34	5,959.3	15,420	3.59	553	7	1,934.1	14,001	499	3.09	432
Illinois-----	236	11,647.3	13,344	236	11,647.3	13,344	3.77	503	2	70.0	10,345	419	3.25	336
Indiana-----	235	13,140.6	13,933	233	12,842.9	14,043	3.64	512	129	7,741.0	14,036	505	3.25	456
Iowa-----	1,156	54,476.4	12,577	1,156	54,476.4	12,577	3.72	468	10	336.5	10,518	415	3.33	350
Kansas-----	131	7,078.1	12,881	131	7,078.1	12,881	3.54	456	---	---	---	---	---	---
Kentucky-----	73	6,032.2	13,153	56	4,626.6	13,336	3.66	489	---	---	---	---	---	---
Louisiana-----	2	108.8	10,502	---	---	---	---	---	---	---	---	---	---	---
Maine-----	43	3,870.2	14,785	43	3,870.2	14,785	3.60	532	1	27.0	13,363	493	3.17	424
Maryland-----	47	2,563.8	14,175	47	2,563.8	14,175	3.70	524	---	---	---	---	---	---
Massachusetts----	19	1,041.6	13,221	19	1,041.6	13,221	3.67	486	1	39.7	13,187	506	3.05	402
Michigan-----	752	47,828.0	14,519	747	47,585.0	14,547	3.71	540	14	772.0	14,759	574	3.37	498
Minnesota-----	2,278	97,004.1	13,813	2,276	96,873.4	13,813	3.80	525	---	---	---	---	---	---
Mississippi-----	5	535.0	11,973	5	535.0	11,973	3.45	414	---	---	---	---	---	---
Missouri-----	177	10,340.0	12,680	177	10,340.0	12,680	3.61	457	---	---	---	---	---	---
Montana-----	10	1,534.0	13,208	10	1,534.0	13,208	3.44	454	2	171.7	13,177	497	3.54	466
Nebraska-----	64	4,202.2	12,702	64	4,202.2	12,702	3.63	461	---	---	---	---	---	---
Nevada-----	6	444.2	14,771	6	444.2	14,771	3.73	551	---	---	---	---	---	---
New Hampshire----	32	2,120.7	14,167	32	2,120.7	14,167	3.63	514	4	92.9	15,239	522	3.34	509
New Jersey-----	40	2,474.3	13,691	40	2,474.3	13,691	3.65	499	36	2,048.5	13,846	503	3.18	440
New Mexico-----	8	2,792.1	15,287	8	2,792.1	15,287	3.57	545	1	96.7	16,257	523	3.31	538
New York-----	2,993	186,847.9	14,737	2,988	186,656.4	14,736	3.62	533	2,824	171,657.9	14,729	534	3.14	462
North Carolina----	64	7,507.4	14,441	21	1,952.8	14,683	3.72	546	1	13.9	8,648	439	3.86	334
North Dakota-----	32	2,289.3	12,407	32	2,289.3	12,407	3.68	456	---	---	---	---	---	---
Ohio-----	651	34,377.0	14,512	651	34,377.0	14,512	3.70	537	224	11,351.3	14,284	530	3.03	432
Oklahoma-----	41	2,821.9	12,740	41	2,821.9	12,740	3.55	452	---	---	---	---	---	---
Oregon-----	45	4,553.5	14,974	45	4,553.5	14,974	3.71	555	15	1,432.2	14,562	531	3.24	471
Pennsylvania-----	1,987	98,786.8	14,395	1,980	98,084.6	14,401	3.67	528	28	886.5	13,399	508	3.24	435
Rhode Island-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---
South Carolina----	13	1,240.6	11,803	5	317.8	9,360	4.11	384	---	---	---	---	---	---
South Dakota-----	312	17,201.0	12,778	312	17,201.0	12,778	3.66	467	---	---	---	---	---	---
Tennessee-----	3	477.2	14,484	3	477.2	14,484	4.38	635	1	162.6	14,235	649	3.77	536
Texas-----	40	6,308.8	12,950	23	3,601.5	13,544	3.56	483	13	1,256.6	13,894	490	3.29	456
Utah-----	22	2,247.7	14,410	22	2,247.7	14,410	3.55	512	19	1,962.2	14,639	517	3.28	480
Vermont-----	258	13,960.7	13,606	258	13,960.7	13,606	3.67	500	30	1,497.5	13,301	498	3.26	433
Virginia-----	39	2,306.8	14,754	39	2,306.8	14,754	3.54	522	---	---	---	---	---	---
Virgin Islands-----	4	536.9	6,788	---	---	---	---	---	---	---	---	---	---	---
Washington-----	70	10,523.9	15,619	70	10,523.9	15,619	3.60	562	64	9,162.8	15,786	570	3.30	522
West Virginia-----	7	292.8	11,666	6	188.4	12,032	3.91	471	---	---	---	---	---	---
Wisconsin-----	9,594	440,446.8	14,253	9,554	438,276.4	14,253	3.89	555	3,028	135,574.6	14,305	556	3.20	458
Wyoming-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---
United States-----	21,938	1,215,129.5	14,138	21,585	1,143,727.5	14,213	3.76	534	6,470	350,349.4	14,532	542	3.17	461

1 Includes Virgin Islands.

Table 3.--State and national cow-year totals and averages for official and nonofficial herd records with solids-not-fat information reported, 1982

State	Herds	Cow-years	Cow-years per herd	Milk	Fat	Fat	Solids- not- fat	Solids- not- fat
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Pounds</i>	<i>Percent</i>	<i>Pounds</i>	<i>Percent</i>	<i>Pounds</i>
Alaska-----	2	141.3	70.7	15,769	3.52	555	8.35	1,317
California -----	685	235,939.9	344.4	17,262	3.68	635	8.84	1,525
Idaho -----	6	558.6	93.1	15,563	3.69	575	8.75	1,361
Iowa -----	2	174.9	87.5	16,950	3.63	615	9.23	1,565
Montana-----	3	232.0	77.3	17,834	3.48	620	8.25	1,472
Nevada -----	7	1,211.3	173.0	17,047	3.58	610	8.56	1,459
North Dakota --	2	70.3	35.2	16,224	3.74	607	8.91	1,445
Oregon -----	5	337.3	67.5	15,203	3.69	561	8.73	1,327
Utah-----	1	161.8	161.8	16,439	3.42	563	8.60	1,414
United States --	713	238,827.4	335.0	17,252	3.68	635	8.83	1,524

Table 4.--State and national cow-year totals and averages for official herd records with feeding and other information reported, 1982

State ¹	Records with milk					Records with fat				Con- cen- trate ³	Succu- lent for- age ⁴	Dry for- age ⁵	Pas- ture days ⁶	Cost of con- centrate	Feed cost	Feed cost/ cwt milk	Value of product	Income over feed cost
	Herds	Cow-years	Cow-years per herd	Days in milk	Milk	Herds	Cow-years	Milk	Fat									
	Number	Number	Number	Percent	Pounds	Number	Number	Pounds	Pounds	Cwt	Cwt	Cwt	Number	Dol	Dol	Dol	Dol	Dol
Alabama-----	182	22,544.6	123.9	85	13,358	182	22,544.6	13,358	492	---	---	---	188	---	---	---	1.851	1,033
Alaska-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Arizona-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Arkansas-----	189	12,338.8	65.3	83	13,093	187	12,254.9	13,107	461	61	60	45	198	470	718	5.53	1,746	1,028
California-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Colorado-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Connecticut-----	270	22,790.9	84.4	86	16,029	270	22,790.9	16,029	592	62	218	16	23	548	888	5.58	2,228	1,340
Delaware-----	37	2,974.2	80.4	87	16,270	37	2,974.2	16,270	603	60	179	16	19	491	764	4.76	2,260	1,496
Florida-----	62	18,898.4	304.8	85	13,471	58	17,415.7	13,445	449	89	27	11	121	637	883	6.59	2,110	1,227
Georgia-----	308	38,318.9	124.4	85	13,515	300	36,888.4	13,531	489	70	9	17	144	556	841	6.31	1,934	1,093
Hawaii-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Idaho-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Illinois-----	1,158	69,709.5	60.2	86	14,376	1,158	69,709.5	14,376	531	54	127	36	45	347	660	4.66	1,847	1,187
Indiana-----	856	53,053.9	62.0	87	14,796	856	53,053.9	14,796	556	62	47	32	39	430	782	5.37	1,970	1,188
Iowa-----	1,341	70,250.6	52.4	86	14,173	1,341	70,250.6	14,173	527	57	113	40	46	333	639	4.58	1,800	1,161
Kansas-----	707	48,756.0	69.0	85	13,953	707	48,756.0	13,953	504	65	111	45	67	426	748	5.43	1,801	1,054
Kentucky-----	477	31,352.8	65.7	84	13,245	477	31,352.8	13,245	491	55	9	24	115	407	668	5.11	1,739	1,071
Louisiana-----	271	27,998.2	103.3	85	12,350	270	27,942.8	12,344	435	61	4	27	324	483	719	5.89	1,723	1,004
Maine-----	408	21,722.5	53.2	86	15,689	408	21,722.5	15,689	573	63	141	31	79	549	850	5.47	2,208	1,359
Maryland-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Massachusetts----	298	17,372.1	58.3	86	15,317	298	17,372.1	15,317	575	61	167	27	61	524	871	5.76	2,228	1,357
Michigan-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Minnesota-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mississippi-----	270	26,846.5	99.4	84	12,485	270	26,846.5	12,485	452	56	10	18	252	432	684	5.56	1,712	1,028
Missouri-----	825	55,655.7	67.5	85	13,786	825	55,655.7	13,786	502	60	92	42	145	440	743	5.45	1,778	1,036
Montana-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nebraska-----	461	31,568.1	68.5	85	13,205	461	31,568.1	13,205	487	58	123	37	38	369	687	5.28	1,691	1,003
Nevada-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
New Hampshire----	198	11,732.1	59.3	86	15,437	198	11,732.1	15,437	578	60	173	26	52	522	846	5.56	2,196	1,349
New Jersey-----	182	13,714.8	75.4	86	15,892	182	13,714.8	15,892	585	61	137	20	50	497	864	5.50	2,183	1,319
New Mexico-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
New York-----	2,771	196,715.9	71.0	86	15,873	2,771	196,715.9	15,873	583	62	144	24	61	470	760	4.84	2,159	1,399
North Carolina----	523	55,874.6	106.8	87	15,287	516	55,082.0	15,298	544	60	20	16	58	504	870	5.77	2,191	1,321
North Dakota-----	144	9,451.4	65.6	83	13,027	144	9,451.4	13,027	467	57	107	40	51	325	591	4.59	1,619	1,028
D Ohio-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Oklahoma-----	276	21,795.6	79.0	84	13,969	276	21,795.6	13,969	505	57	66	53	173	431	752	5.48	1,860	1,108
Oregon-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pennsylvania-----	3,768	219,702.1	58.3	86	15,523	3,768	219,702.1	15,523	577	65	146	29	72	470	822	5.36	2,099	1,277
Puerto Rico-----	106	19,611.8	185.0	75	9,152	101	18,724.4	9,063	280	45	11	2	351	514	739	8.14	1,909	1,170
Rhode Island-----	22	1,249.4	56.8	84	13,950	22	1,249.4	13,950	509	49	163	24	109	405	750	5.46	1,987	1,237
South Carolina----	210	29,593.3	140.9	86	13,829	209	29,461.6	13,817	537	58	20	15	156	462	815	5.99	2,051	1,236
South Dakota-----	267	17,282.4	64.7	85	13,630	267	17,282.4	13,630	496	55	119	39	32	283	615	4.58	1,723	1,108
Tennessee-----	657	59,849.5	91.1	85	14,058	657	59,849.5	14,058	516	61	10	18	86	501	806	5.80	1,937	1,131
Texas-----	551	72,022.2	130.7	83	13,997	549	71,772.2	13,999	508	68	14	56	156	501	841	6.08	1,982	1,140
Utah-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vermont-----	945	55,444.4	58.7	85	14,865	945	55,444.4	14,865	552	57	118	23	89	479	754	5.14	2,091	1,337
Virginia-----	893	84,867.8	95.0	86	15,190	893	84,867.8	15,190	548	55	23	16	101	458	800	5.32	2,064	1,264
Washington-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
West Virginia-----	161	12,622.9	78.4	86	14,402	161	12,622.9	14,402	520	57	151	19	99	449	734	5.14	1,971	1,237
Wisconsin-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wyoming-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
United States-----	19,794	1,453,681.9	73.4	85	14,583	19,764	1,448,567.7	14,588	535	61	90	28	95	459	773	5.40	1,992	1,218

¹ Data reported from Iowa, New York, North Carolina, and Pennsylvania dairy records processing centers.² Includes Puerto Rico.³ Percentage of U.S. cows fed concentrates in 1983: 100.0.⁴ Percentage of U.S. cows fed succulent forage in 1983: 75.3.⁵ Percentage of U.S. cows fed dry forage in 1983: 88.7.⁶ Percentage of U.S. cows with 1 or more days on pasture: 57.0.

Table 5.--State and national cow-year totals and averages for nonofficial herd records with feeding and other information reported, 1982¹

State ²	Records with milk					Records with fat				Con- cen- trate ³	Succu- lent for- age ⁴	Dry for- age ⁵	Pas- ture days ⁶	Cost of con- cen- trate	Feed cost	Feed cost/ cwt milk	Value of product	Income over feed cost
	Herds	Cow-years	per herd	Days in milk	Milk	Herds	Cow-years	Milk	Fat									
	Number	Number	Number	Percent	Pounds	Number	Number	Pounds	Pounds	Cwt	Cwt	Cwt	Number	Dol	Dol	Dol	Dol	Dol
Alabama-----	4	426.5	106.6	86	13,664	4	426.5	13,664	493	32	18	12	68	255	540	3.98	1,861	1,321
Alaska-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Arizona-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Arkansas-----	36	2,217.1	61.6	84	13,005	36	2,217.1	13,005	446	56	48	45	255	448	677	5.30	1,725	1,048
California-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Colorado-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Connecticut-----	30	2,685.2	89.5	84	14,526	30	2,685.2	14,526	525	59	204	16	24	483	795	5.48	1,995	1,199
Delaware-----	3	389.3	129.8	87	14,846	3	389.3	14,846	544	90	191	21	---	673	1,014	6.98	2,000	986
Florida-----	94	36,258.9	385.7	84	12,854	1	86.0	12,611	449	94	36	16	70	660	871	6.83	2,034	1,162
Georgia-----	104	16,566.1	159.3	83	12,956	10	667.6	14,150	483	71	7	16	143	552	802	6.32	1,866	1,064
Hawaii-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Idaho-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Illinois-----	236	11,647.3	49.4	85	13,344	236	11,647.3	13,344	503	49	122	38	47	314	621	4.72	1,716	1,095
Indiana-----	204	11,435.4	56.1	85	13,852	203	11,435.4	13,981	497	59	37	29	39	396	700	5.19	1,806	1,106
Iowa-----	1,154	54,406.0	47.1	85	12,575	1,154	54,406.0	12,575	468	49	102	41	48	290	567	4.57	1,587	1,020
Kansas-----	131	7,078.1	54.0	85	12,881	131	7,078.1	12,881	456	58	95	53	94	382	678	5.35	1,620	942
Kentucky-----	71	5,791.4	81.6	84	13,087	55	4,626.6	13,283	488	55	14	23	101	400	673	5.18	1,704	1,031
Louisiana-----	2	108.8	54.4	84	10,502	---	---	---	---	60	---	20	366	501	673	6.50	1,548	875
Maine-----	41	3,625.7	88.4	85	14,532	41	3,625.7	14,532	524	64	206	14	26	511	837	5.84	2,059	1,222
Maryland-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Massachusetts----	19	1,041.6	54.8	83	13,221	19	1,041.6	13,221	486	53	163	27	72	464	793	6.06	1,942	1,149
Michigan-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Minnesota-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mississippi-----	5	535.0	107.0	86	11,973	5	535.0	11,973	414	46	18	14	248	344	669	5.78	1,651	982
Missouri-----	177	10,340.0	58.4	84	12,680	177	10,340.0	12,680	457	57	89	40	147	409	685	5.43	1,620	935
Montana-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nebraska-----	64	4,202.2	65.7	85	12,702	64	4,202.2	12,702	461	53	97	45	67	335	628	5.06	1,588	960
Nevada-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
New Hampshire----	28	1,846.5	65.9	84	14,141	28	1,846.5	14,141	510	55	138	27	47	460	765	5.50	1,975	1,211
New Jersey-----	38	2,260.6	59.5	86	14,007	38	2,260.6	14,007	510	55	147	24	95	431	747	5.38	1,911	1,164
New Mexico-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
New York-----	2,866	176,095.2	61.4	85	14,728	2,861	175,927.8	14,728	533	56	136	26	73	425	709	4.86	1,986	1,276
North Carolina----	58	6,059.0	104.5	86	14,213	21	1,952.8	14,683	546	57	18	13	69	492	856	6.11	2,037	1,181
North Dakota----	32	2,289.3	71.5	82	12,407	32	2,289.3	12,407	456	47	103	42	32	281	565	4.64	1,570	1,004
Ohio-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Oklahoma-----	41	2,821.9	68.8	82	12,740	41	2,821.9	12,740	452	56	65	57	175	436	740	5.90	1,694	954
Oregon-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pennsylvania-----	1,967	96,685.6	49.2	85	14,390	1,961	96,685.6	14,395	526	60	139	30	77	451	801	5.64	1,928	1,127
Rhode Island-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
South Carolina----	10	1,025.0	102.5	84	11,914	4	273.2	10,187	417	53	13	8	125	429	734	6.32	1,723	989
South Dakota-----	312	17,201.0	55.1	83	12,778	312	17,201.0	12,778	467	52	105	46	42	302	600	4.77	1,609	1,009
Tennessee-----	3	477.2	159.1	88	14,484	3	477.2	14,484	635	49	---	25	177	360	760	5.24	2,130	1,371
Texas-----	35	5,387.9	153.9	83	13,096	21	3,121.5	13,547	481	71	4	63	177	540	837	6.47	1,838	1,000
Vermont-----	248	13,219.7	53.3	84	13,590	248	13,219.7	13,590	498	48	102	25	99	411	691	5.16	1,902	1,211
Virginia-----	38	2,295.5	60.4	86	14,754	38	2,295.5	14,754	522	55	28	16	90	451	782	5.40	1,947	1,164
Virgin Islands-----	1	139.2	139.2	65	8,142	---	---	---	---	50	---	---	365	580	880	10.81	1,679	799
Washington-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
West Virginia-----	7	292.8	41.8	87	11,666	6	188.4	12,032	471	50	93	24	208	422	682	6.14	1,683	1,001
Wisconsin-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wyoming-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
United States----	8,059	496,851.0	61.7	85	13,896	7,783	496,579.2	14,039	449	59	110	30	76	430	723	5.28	1,878	1,155

¹ Data reported from Iowa, New York, North Carolina, and Pennsylvania dairy records processing centers.² Includes Virgin Islands.³ Percentage of U.S. cows fed concentrates in 1983: 100.0.⁴ Percentage of U.S. cows fed succulent forage in 1983: 84.2.⁵ Percentage of U.S. cows fed dry forage in 1983: 87.4.⁶ Percentage of U.S. cows with 1 or more days on pasture: 54.5.

Table 6.--National cow-year totals and averages by breed and type of plan, 1982

Type of plan	Records with milk			Records with fat					Records with butterfat				
	Herds	Cow-years	Milk	Herds	Cow-years	Milk	Fat	Fat	Herds	Cow-years	Milk	Fat	Percent
	Number	Number	Pounds	Number	Number	Pounds	Percent	Pounds	Number	Number	Pounds	Pounds	Percent
Ayrshire													
Official -----	411	18,153.7	12,250	411	18,153.7	12,250	3.94	482	144	6,085.7	12,566	496	3.35
Nonofficial-----	91	3,224.7	11,381	91	3,224.7	11,381	3.91	444	43	1,709.4	11,085	439	3.30
Total or average--	502	21,378.4	12,119	502	21,378.4	12,119	3.93	477	187	7,795.1	12,241	483	3.34
Brown Swiss													
Official -----	558	26,552.8	12,767	558	26,552.8	12,767	4.09	522	232	11,738.9	13,053	537	3.59
Nonofficial-----	129	4,115.2	11,570	129	4,115.2	11,570	4.07	471	41	1,338.9	11,775	479	3.45
Total or average--	687	30,668.0	12,607	687	30,668.0	12,607	4.09	515	273	13,077.8	12,922	531	3.58
Guernsey													
Official -----	938	51,517.2	11,252	938	51,517.2	11,252	4.69	527	330	16,876.5	11,458	544	3.60
Nonofficial-----	406	14,653.0	10,588	406	14,653.0	10,588	4.57	484	180	6,669.3	10,828	499	3.49
Total or average--	1,344	66,170.2	11,105	1,344	66,170.2	11,105	4.66	518	510	23,545.8	11,279	532	3.57
Holstein													
Official -----	33,285	2,917,905.4	15,610	33,256	2,912,883.5	15,614	3.64	568	8,162	677,584.9	16,010	581	3.23
Nonofficial-----	20,541	1,160,246.4	14,285	20,203	1,091,165.9	14,367	3.74	537	5,987	332,790.3	14,719	544	3.16
Total or average--	53,826	4,078,151.8	15,233	53,459	4,004,049.4	15,274	3.67	560	14,149	1,010,375.2	15,585	569	3.21
Jersey													
Official -----	1,536	111,270.1	10,694	1,536	111,270.1	10,694	4.88	522	675	54,228.1	11,029	542	3.87
Nonofficial-----	367	14,301.4	9,772	363	13,673.9	9,885	4.85	479	145	4,959.4	9,963	485	3.75
Total or average--	1,903	125,571.5	10,589	1,899	124,944.0	10,606	4.87	517	820	59,187.5	10,940	538	3.86
Milking Shorthorn													
Official -----	89	3,147.1	10,926	89	3,147.1	10,926	3.68	402	17	602.7	11,628	430	3.29
Nonofficial-----	11	331.0	9,986	11	331.0	9,986	3.67	367	---	---	---	---	---
Total or average--	100	3,478.1	10,837	100	3,478.1	10,837	3.68	399	17	602.7	11,628	430	3.29
Red and White													
Official -----	25	1,650.6	15,840	25	1,650.6	15,840	3.64	577	9	571.6	15,888	581	3.21
Nonofficial-----	78	286.3	13,244	8	286.3	13,244	3.78	501	4	168.3	13,885	509	3.18
Total or average--	33	1,936.9	15,456	33	1,936.9	15,456	3.66	565	13	739.9	15,432	565	3.21
Mixed breed													
Official -----	755	52,032.7	12,834	753	51,861.0	12,839	3.86	495	158	11,484.3	12,920	503	3.42
Nonofficial-----	385	17,971.5	12,197	379	16,520.5	12,097	3.91	473	70	2,713.8	12,520	509	3.31
Total or average--	1,140	70,004.2	12,671	1,132	68,381.5	12,660	3.87	490	228	14,198.1	12,844	504	3.40

Table 7.--National cow-year totals and averages for all official and nonofficial herd records by breed and milk level, 1982

Milk level (pounds)	Records with milk			Records with fat					Records with protein					
	Herd	Cow-years	Milk	Herd	Cow-years	Milk	Fat	Fat	Herd	Cow-years	Milk	Fat	Protein	Protein
	Number	Number	Pounds	Number	Number	Pounds	Percent	Pounds	Number	Number	Pounds	Pounds	Percent	Pounds
Ayrshire														
Less than 7,000---	7	265.4	6,476	7	265.4	6,476	4.12	267	4	137.3	6,489	268	3.25	211
7,000- 7,999---	7	344.1	7,514	7	344.1	7,514	3.98	299	2	83.1	7,471	293	3.20	239
8,000- 8,999---	19	648.8	8,563	19	648.8	8,563	3.88	332	2	96.4	8,404	338	3.34	280
9,000- 9,999---	44	1,509.4	9,524	44	1,509.4	9,524	3.94	375	12	538.4	9,486	375	3.37	320
10,000-10,999---	69	2,583.4	10,495	69	2,583.4	10,495	3.93	412	25	862.2	10,447	415	3.30	344
11,000-11,999---	100	4,373.4	11,477	100	4,373.4	11,477	3.96	454	37	1,408.9	11,497	457	3.36	386
12,000-12,999---	91	4,018.7	12,474	91	4,018.7	12,474	3.95	493	42	1,973.1	12,519	499	3.35	419
13,000-13,999---	93	4,780.2	13,468	93	4,780.2	13,468	3.91	526	31	1,455.7	13,518	526	3.35	453
14,000-14,999---	41	1,577.9	14,431	41	1,577.9	14,431	3.90	562	18	702.0	14,379	562	3.33	479
15,000-15,999---	23	964.3	15,367	23	964.3	15,367	3.93	604	12	482.0	15,317	605	3.33	510
16,000-16,999---	6	178.3	16,322	6	178.3	16,322	3.79	618	1	36.4	16,016	622	3.16	506
17,000-17,999---	1	19.6	17,743	1	19.6	17,743	3.83	679	1	19.6	17,743	679	3.50	621
19,000-19,999---	1	114.9	19,049	1	114.9	19,049	4.21	802	---	---	---	---	---	---
Total or average---	502	21,378.4	12,119	502	21,378.4	12,119	3.93	477	187	7,795.1	12,241	483	3.34	409
Brown Swiss														
Less than 7,000---	3	117.4	5,479	3	117.4	5,479	3.73	205	---	---	---	---	---	---
7,000- 7,999---	7	256.8	7,588	7	256.8	7,588	4.01	304	1	59.0	7,709	303	3.53	272
8,000- 8,999---	26	1,355.5	8,642	26	1,355.5	8,642	4.15	359	5	234.0	8,556	347	3.43	293
9,000- 9,999---	43	1,624.6	9,538	43	1,624.6	9,538	3.98	380	16	593.8	9,613	385	3.49	335
10,000-10,999---	75	2,782.8	10,534	75	2,782.8	10,534	4.07	428	23	1,076.5	10,590	436	3.54	375
11,000-11,999---	119	4,787.3	11,530	119	4,787.3	11,530	4.09	472	49	2,131.2	11,520	479	3.60	415
12,000-12,999---	166	7,102.9	12,532	166	7,102.9	12,532	4.11	515	63	2,700.7	12,492	512	3.58	447
13,000-13,999---	100	5,267.1	13,432	100	5,267.1	13,432	4.10	550	47	2,753.3	13,418	549	3.63	487
14,000-14,999---	73	3,410.9	14,497	73	3,410.9	14,497	4.09	594	31	1,492.3	14,500	594	3.57	517
15,000-15,999---	48	2,530.4	15,543	48	2,530.4	15,543	4.06	631	24	1,388.4	15,505	639	3.57	554
16,000-16,999---	18	1,150.2	16,231	18	1,150.2	16,231	4.06	660	7	400.8	16,292	665	3.52	573
17,000-17,999---	6	205.2	17,814	6	205.2	17,814	4.21	750	4	170.9	17,881	757	3.59	642
18,000-18,999---	2	64.8	18,389	2	64.8	18,389	4.15	764	2	64.8	18,389	764	3.62	666
20,000-20,999---	1	12.1	20,802	1	12.1	20,802	3.54	737	1	12.1	20,802	737	3.50	729
Total or average---	687	30,668.0	12,607	687	30,668.0	12,607	4.09	515	273	13,077.8	12,922	531	3.58	463
Guernsey														
Less than 7,000---	20	712.6	6,176	20	712.6	6,176	4.69	290	4	218.0	6,599	306	3.54	234
7,000- 7,999---	56	2,100.2	7,609	56	2,100.2	7,609	4.65	354	14	484.5	7,592	365	3.49	265
8,000- 8,999---	105	4,385.7	8,548	105	4,385.7	8,548	4.66	398	36	1,231.2	8,551	400	3.58	386
9,000- 9,999---	235	10,514.3	9,551	235	10,514.3	9,551	4.68	447	86	3,724.1	9,568	456	3.58	342
10,000-10,999---	282	13,058.4	10,551	282	13,058.4	10,551	4.69	495	102	4,663.8	10,562	504	3.59	380
11,000-11,999---	299	15,786.7	11,505	299	15,786.7	11,505	4.69	539	113	5,091.7	11,463	543	3.56	408
12,000-12,999---	185	10,448.8	12,434	185	10,448.8	12,434	4.69	584	76	4,056.6	12,413	583	3.58	444
13,000-13,999---	108	6,187.2	13,461	108	6,187.2	13,461	4.57	615	54	2,895.2	13,443	622	3.58	481
14,000-14,999---	39	2,053.9	14,416	39	2,053.9	14,416	4.51	650	18	806.8	14,385	674	3.53	508
15,000-15,999---	12	777.5	15,341	12	777.5	15,341	4.53	694	6	347.8	15,419	661	3.50	540
16,000-16,999---	2	116.5	16,175	2	116.5	16,175	4.61	745	1	26.1	16,516	778	3.35	554
18,000-18,999---	1	28.4	18,085	1	28.4	18,085	4.13	747	---	---	---	---	---	---
Total or average---	1,344	66,170.2	11,105	1,344	66,170.2	11,105	4.66	518	510	23,545.8	11,279	532	3.57	403
Holstein														
Less than 7,000---	72	6,900.7	6,187	71	6,834.4	6,180	3.37	209	9	301.7	6,245	237	3.17	198
7,000- 7,999---	123	8,873.0	7,581	120	8,504.1	7,575	3.36	254	8	273.3	7,497	278	3.15	236
8,000- 8,999---	321	22,893.6	8,578	311	20,945.9	8,580	3.50	300	42	2,150.0	8,593	319	3.20	275
9,000- 9,999---	751	49,725.0	9,569	732	46,758.0	9,567	3.60	345	112	6,017.2	9,637	360	3.24	312
10,000-10,999---	1,601	96,176.3	10,546	1,574	89,947.5	10,553	3.67	387	279	14,581.8	10,564	388	3.20	338
11,000-11,999---	3,053	196,512.5	11,565	3,007	188,411.6	11,565	3.69	426	574	35,455.7	11,578	424	3.22	373
12,000-12,999---	5,138	320,908.1	12,531	5,078	306,990.9	12,533	3.70	464	1,068	61,998.3	12,543	465	3.18	399
13,000-13,999---	7,463	495,693.1	13,524	7,387	477,080.4	13,525	3.70	501	1,740	115,212.1	13,529	500	3.21	434
14,000-14,999---	9,083	622,936.7	14,514	9,022	610,968.7	14,512	3.69	536	2,297	155,261.9	14,541	537	3.21	467
15,000-15,999---	9,119	686,183.6	15,502	9,082	679,922.0	15,502	3.67	569	2,523	181,561.3	15,502	567	3.20	497
16,000-16,999---	7,592	630,669.8	16,484	7,577	627,841.7	16,485	3.66	604	2,329	174,826.5	16,487	601	3.21	529
17,000-17,999---	4,967	449,547.6	17,461	4,957	448,793.5	17,461	3.65	637	1,613	127,034.7	17,459	634	3.20	559
18,000-18,999---	2,732	275,869.1	18,428	2,732	275,869.1	18,428	3.63	669	937	78,127.4	18,443	666	3.21	592
19,000-19,999---	1,126	123,181.3	19,444	1,125	123,119.9	19,444	3.60	700	398	35,086.9	19,455	691	3.20	622
20,000-20,999---	458	60,065.9	20,457	458	60,065.9	20,457	3.60	737	150	14,958.7	20,409	729	3.20	654
21,000-21,999---	151	23,794.1	21,430	151	23,794.1	21,430	3.60	771	51	5,838.7	21,445	749	3.23	692
22,000-22,999---	54	6,721.2	22,372	54	6,721.2	22,372	3.55	795	12	1,195.9	22,455	746	3.22	723
23,000-23,999---	11	627.0	23,505	11	627.0	23,505	3.47	816	4	238.1	23,472	794	3.15	740
24,000-24,999---	10	864.6	24,367	9	844.9	24,373	3.49	851	3	255.0	24,331	816	3.16	769
25,000 or more---	1	8.6	25,150	1	8.6	25,150	4.39	1,103	---	---	---	---	---	---
Total or average---	53,826	4,078,151.8	15,233	53,459	4,004,049.4	15,274	3.67	560	14,149	1,010,375.2	15,585	569	3.21	500

Table 7.--National cow-year totals and averages for all official and nonofficial herd records by breed and milk level, 1982--Continued

Milk level (pounds)	Records with milk			Records with fat			Records with protein						
	Herds	Cow-years	Milk	Herds	Cow-years	Milk	Fat	Fat	Herds	Cow-years	Milk	Fat	Protein
	Number	Number	Pounds	Number	Number	Pounds	Percent	Pounds	Number	Number	Pounds	Pounds	Percent
Jersey													
Less than 7,000---	61	2,484.4	6,010	60	2,258.5	6,197	4.73	293	16	611.2	6,499	313	3.74
7,000- 7,999---	96	5,954.2	7,573	95	5,803.4	7,566	4.84	366	35	2,434.7	7,460	367	3.94
8,000- 8,999---	263	14,593.5	8,555	263	14,593.5	8,555	4.83	413	74	4,153.9	8,529	417	3.91
9,000- 9,999---	403	23,460.4	9,544	401	23,209.6	9,540	4.86	463	161	9,066.4	9,524	467	3.87
10,000-10,999---	425	29,146.2	10,538	425	29,146.2	10,538	4.90	516	188	13,805.8	10,561	520	3.87
11,000-11,999---	322	21,356.8	11,474	322	21,356.8	11,474	4.87	559	167	12,491.8	11,480	562	3.87
12,000-12,999---	209	19,264.8	12,448	209	19,264.8	12,448	4.92	613	113	11,338.4	12,438	617	3.86
13,000-13,999---	81	5,930.3	13,363	81	5,930.3	13,363	4.86	650	44	3,425.1	13,378	657	3.76
14,000-14,999---	33	2,529.2	14,384	33	2,529.2	14,384	4.78	688	16	1,333.3	14,409	691	3.72
15,000-15,999---	7	642.5	15,426	7	642.5	15,426	4.76	735	4	355.6	15,636	777	3.72
16,000-16,999---	3	209.2	16,200	3	209.2	16,200	4.70	761	2	171.3	16,201	795	3.71
Total or average--	1,903	125,571.5	10,589	1,899	124,944.0	10,606	4.87	517	820	59,187.5	10,940	538	3.86
Milking Shorthorn													
Less than 7,000---	5	131.2	6,328	5	131.2	6,328	3.74	237	1	46.4	6,401	240	3.20
7,000- 7,999---	6	173.4	7,574	6	173.4	7,574	3.92	297	---	---	---	---	---
8,000- 8,999---	8	282.8	8,497	8	282.8	8,497	3.58	305	---	---	---	---	---
9,000- 9,999---	14	449.7	9,436	14	449.7	9,436	3.65	345	1	10.3	9,184	327	3.35
10,000-10,999---	17	601.8	10,373	17	601.8	10,373	3.63	377	2	106.9	10,306	383	3.36
11,000-11,999---	23	908.9	11,366	23	908.9	11,366	3.64	414	4	110.6	11,335	421	3.23
12,000-12,999---	12	479.2	12,412	12	479.2	12,412	3.67	455	4	196.4	12,383	446	3.31
13,000-13,999---	10	260.1	13,428	10	260.1	13,428	3.73	501	3	92.0	13,531	520	3.25
14,000-14,999---	4	104.5	14,652	4	104.5	14,652	3.72	545	2	40.1	14,580	541	3.26
15,000-15,999---	1	86.5	15,673	1	86.5	15,673	4.00	627	---	---	---	---	---
Total or average--	100	3,478.1	10,837	100	3,478.1	10,837	3.68	399	17	602.7	11,628	430	3.29
Red and White													
11,000-11,999---	4	173.4	11,611	4	173.4	11,611	3.81	443	1	28.3	11,629	404	2.92
12,000-12,999---	5	223.0	12,336	5	223.0	12,336	3.82	471	1	41.8	12,142	468	3.21
13,000-13,999---	3	160.0	13,505	3	160.0	13,505	3.55	480	1	46.9	13,731	473	3.13
14,000-14,999---	6	321.0	14,452	6	321.0	14,452	3.79	547	3	188.2	14,623	565	3.18
15,000-15,999---	5	195.6	15,429	5	195.6	15,429	3.81	588	2	83.3	15,482	574	3.16
16,000-16,999---	4	241.4	16,466	4	241.4	16,466	3.59	591	4	241.4	16,466	591	3.24
17,000-17,999---	3	260.0	17,384	3	260.0	17,384	3.64	633	1	110.0	17,467	617	3.28
18,000-18,999---	2	289.6	18,250	2	289.6	18,250	3.45	629	---	---	---	---	---
21,000-21,999---	1	72.9	21,604	1	72.9	21,604	3.57	771	---	---	---	---	---
Total or average--	33	1,936.9	15,456	33	1,936.9	15,456	3.66	565	13	739.9	15,432	565	3.21
Mixed breed													
Less than 7,000---	16	594.8	6,378	16	594.8	6,378	4.12	263	1	22.5	6,975	264	3.11
7,000- 7,999---	21	1,013.3	7,404	21	1,013.3	7,404	3.95	292	1	58.8	7,746	402	3.67
8,000- 8,999---	52	2,616.1	8,629	52	2,616.1	8,629	4.08	352	7	344.5	8,797	394	3.45
9,000- 9,999---	103	5,127.4	9,530	102	4,980.8	9,532	4.02	383	14	426.9	9,515	388	3.45
10,000-10,999---	173	9,327.3	10,528	172	9,217.9	10,529	4.02	424	36	2,573.8	10,531	423	3.44
11,000-11,999---	180	10,214.2	11,508	178	10,077.9	11,507	4.00	460	41	2,594.3	11,483	479	3.48
12,000-12,999---	164	10,723.1	12,484	163	10,471.1	12,486	3.89	486	23	1,711.0	12,575	488	3.43
13,000-13,999---	142	8,358.1	13,441	141	8,295.8	13,444	3.85	517	39	2,129.1	13,405	533	3.41
14,000-14,999---	121	9,179.5	14,473	119	8,263.4	14,473	3.76	544	24	1,548.4	14,471	554	3.40
15,000-15,999---	81	6,139.7	15,403	81	6,139.7	15,403	3.75	578	19	1,221.6	15,439	571	3.34
16,000-16,999---	46	3,081.4	16,408	46	3,081.4	16,408	3.77	619	12	769.9	16,309	600	3.26
17,000-17,999---	25	2,557.3	17,398	25	2,557.3	17,398	3.56	620	10	755.7	17,376	633	3.28
18,000-18,999---	11	869.5	18,209	11	869.5	18,209	3.78	688	1	41.6	18,032	637	3.07
19,000-19,999---	4	156.9	19,631	4	156.9	19,631	3.64	715	---	---	---	---	---
20,000-20,999---	1	45.6	20,410	1	45.6	20,410	3.66	746	---	---	---	---	---
Total or average--	1,140	70,004.2	12,671	1,132	68,381.5	12,660	3.87	490	228	14,198.1	12,844	504	3.40
All breeds													
Less than 7,000---	184	11,206.5	6,158	182	10,914.3	6,195	3.81	236	35	1,337.1	6,461	287	3.50
7,000- 7,999---	316	18,715.0	7,570	312	18,195.3	7,566	4.04	306	61	3,393.4	7,491	357	3.78
8,000- 8,999---	794	46,776.0	8,572	784	44,828.3	8,573	4.10	352	166	8,210.0	8,560	385	3.63
9,000- 9,999---	1,593	92,410.8	9,556	1,571	89,046.4	9,554	4.09	391	402	20,377.1	9,567	427	3.60
10,000-10,999---	2,642	153,676.2	10,542	2,614	147,338.0	10,546	4.03	426	655	37,670.8	10,557	455	3.52
11,000-11,999---	4,100	254,113.2	11,549	4,052	245,876.0	11,548	3.88	448	986	59,312.5	11,539	469	3.41
12,000-12,999---	5,970	373,168.6	12,522	5,909	358,999.4	12,523	3.81	477	1,390	84,016.3	12,521	494	3.31
13,000-13,999---	8,000	526,636.1	13,518	7,923	507,961.1	13,519	3.73	505	1,959	128,009.4	13,519	509	3.25
14,000-14,999---	9,400	642,113.6	14,512	9,337	629,229.5	14,510	3.71	538	2,409	161,373.0	14,537	539	3.22
15,000-15,999---	9,296	697,520.1	15,501	9,259	691,258.5	15,501	3.68	570	2,590	185,440.0	15,501	569	3.21
16,000-16,999---	7,671	635,646.8	16,483	7,656	632,818.7	16,484	3.66	604	2,356	176,472.4	16,485	601	3.21
17,000-17,999---	5,002	452,589.7	17,460	4,992	451,835.6	17,460	3.65	637	1,629	128,090.9	17,459	634	3.21
18,000-18,999---	2,748	277,121.4	18,427	2,748	277,121.4	18,427	3.63	669	940	78,233.8	18,443	666	3.21
19,000-19,999---	1,131	123,453.1	19,444	1,130	123,391.7	19,444	3.60	700	398	35,086.9	19,455	691	3.20
20,000-20,999---	460	60,123.6	20,457	460	60,123.6	20,457	3.60	737	151	14,970.8	20,409	729	3.20
21,000-21,999---	152	23,867.0	21,431	152	23,867.0	21,431	3.60	771	51	5,838.7	21,445	749	3.23
22,000-22,999---	54	6,721.2	22,372	54	6,721.2	22,372	3.55	795	12	1,195.9	22,455	746	3.22
23,000-23,999---	11	627.0	23,505	11	627.0	23,505	3.47	816	4	238.1	23,472	794	3.15
24,000-24,999---	10	864.6	24,367	9	844.9	24,373	3.49	851	3	255.0	24,331	816	3.16
25,000 or more--	1	8.6	25,150	1	8.6	25,150	4.39	1,103	---	---	---	---	---
Total or average--	59,535	4,397,359.1	14,961	59,156	4,321,006.5	14,996	3.71	556	16,197	1,129,522.1	15,161	565	3.24

Table 8.--National cow-year totals and averages for all official and nonofficial herd records by breed and herd size, 1982

Herd size (number)	Records with milk			Records with fat					Records with protein					
	Herds	Cow-years	Milk	Herds	Cow-years	Milk	Fat	Fat	Herds	Cow-years	Milk	Fat	Protein	Protein
	Number	Number	Pounds	Number	Number	Pounds	Percent	Pounds	Number	Number	Pounds	Pounds	Percent	Pounds
Ayrshire														
5- 24.9-----	140	2,116.5	11,860	140	2,116.5	11,860	3.94	467	48	655.9	12,666	505	3.33	422
25- 49.9-----	205	7,619.1	11,802	205	7,619.1	11,802	3.93	464	73	2,667.4	11,664	459	3.31	386
50- 74.9-----	107	6,354.3	12,089	107	6,354.3	12,089	3.94	476	52	3,091.1	12,362	486	3.33	412
75- 99.9-----	34	2,946.7	12,324	34	2,946.7	12,324	3.91	482	9	769.7	12,618	508	3.45	436
100- 149.9-----	11	1,296.2	13,793	11	1,296.2	13,793	4.00	551	4	446.2	12,992	529	3.37	438
150- 199.9-----	3	548.4	13,573	3	548.4	13,573	3.86	524	1	164.8	13,851	507	3.43	475
200- 299.9-----	2	497.2	11,275	2	497.2	11,275	3.86	436	---	---	---	---	---	---
Total or average--	502	21,378.4	12,119	502	21,378.4	12,119	3.93	477	187	7,795.1	12,241	483	3.34	409
Brown Swiss														
5- 24.9-----	180	2,723.2	12,093	180	2,723.2	12,093	4.08	494	75	1,118.4	12,412	511	3.52	437
25- 49.9-----	294	10,825.1	12,350	294	10,825.1	12,350	4.10	506	97	3,721.6	12,701	527	3.55	451
50- 74.9-----	135	8,035.8	12,411	135	8,035.8	12,411	4.08	506	63	3,752.8	12,943	526	3.56	461
75- 99.9-----	37	3,115.5	13,180	37	3,115.5	13,180	4.09	539	17	1,416.0	13,678	563	3.60	492
100- 149.9-----	32	3,832.8	13,171	32	3,832.8	13,171	4.09	539	16	1,889.1	12,655	522	3.63	460
150- 199.9-----	2	346.9	12,882	2	346.9	12,882	4.05	522	1	157.7	12,127	472	3.74	454
200- 299.9-----	6	1,459.9	13,643	6	1,459.9	13,643	4.09	558	3	693.4	14,057	581	3.58	503
300- 399.9-----	1	328.8	13,183	1	328.8	13,183	3.99	526	1	328.8	13,183	526	3.81	502
Total or average--	687	30,668.0	12,607	687	30,668.0	12,607	4.09	515	273	13,077.8	12,922	531	3.58	463
Guernsey														
5- 24.9-----	257	4,367.7	10,525	257	4,367.7	10,525	4.62	486	105	1,643.5	10,964	512	3.51	385
25- 49.9-----	622	23,031.4	10,728	622	23,031.4	10,728	4.65	499	239	8,744.2	11,018	516	3.53	389
50- 74.9-----	284	17,117.8	11,329	284	17,117.8	11,329	4.69	532	103	6,322.0	11,355	540	3.58	407
75- 99.9-----	96	8,152.0	11,451	96	8,152.0	11,451	4.65	532	34	2,890.2	11,870	554	3.60	427
100- 149.9-----	50	5,998.3	11,428	50	5,998.3	11,428	4.63	529	22	2,690.5	11,378	542	3.63	413
150- 199.9-----	25	4,219.5	11,264	25	4,219.5	11,264	4.64	522	6	1,045.1	11,213	531	3.65	409
200- 299.9-----	6	1,455.4	12,381	6	1,455.4	12,381	4.70	582	1	210.3	13,247	622	3.69	489
300- 399.9-----	2	631.9	9,614	2	631.9	9,614	4.77	459	---	---	---	---	---	---
400- 499.9-----	1	412.4	11,603	1	412.4	11,603	4.59	532	---	---	---	---	---	---
750- 999.9-----	1	783.8	12,184	1	783.8	12,184	4.88	595	---	---	---	---	---	---
Total or average--	1,344	66,170.2	11,105	1,344	66,170.2	11,105	4.66	518	510	23,545.8	11,279	532	3.57	403
Holstein														
5- 24.9-----	2,825	55,172.4	14,064	2,820	55,060.1	14,061	3.70	521	671	12,786.9	14,366	535	3.15	453
25- 49.9-----	21,383	825,711.6	14,641	21,350	824,443.5	14,643	3.72	544	5,284	206,526.3	14,965	556	3.15	472
50- 74.9-----	14,848	901,861.7	15,026	14,797	898,706.8	15,031	3.69	555	4,153	252,526.1	15,524	572	3.18	493
75- 99.9-----	6,305	541,133.7	15,088	6,265	537,723.9	15,099	3.66	552	1,762	150,982.2	15,592	569	3.21	500
100- 149.9-----	4,623	552,613.8	15,203	4,548	543,301.9	15,246	3.63	554	1,328	159,335.4	15,834	574	3.22	511
150- 199.9-----	1,568	268,850.3	15,161	1,515	259,681.6	15,236	3.62	552	475	81,603.5	15,975	576	3.25	519
200- 299.9-----	1,124	270,222.1	15,441	1,081	259,833.3	15,549	3.61	562	316	75,515.7	16,100	575	3.27	527
300- 399.9-----	428	146,730.9	15,587	410	140,654.4	15,708	3.62	569	97	33,396.8	16,130	579	3.28	529
400- 499.9-----	242	108,400.8	16,231	228	101,968.9	16,439	3.64	599	34	15,304.6	16,353	581	3.28	537
500- 749.9-----	272	163,357.9	16,585	248	148,674.7	16,925	3.65	617	18	10,413.4	16,777	583	3.30	553
750- 999.9-----	99	85,037.7	16,798	89	76,568.7	17,232	3.66	631	7	6,349.1	15,164	551	3.31	502
1,000-1,249.9-----	52	57,245.7	17,626	52	57,245.7	17,626	3.60	635	2	2,124.9	19,830	654	3.34	662
1,250-1,499.9-----	26	36,052.3	17,260	26	36,052.3	17,260	3.61	624	---	---	---	---	---	---
1,500-1,999.9-----	17	28,881.0	16,341	16	27,253.7	16,429	3.64	597	2	3,510.3	15,124	547	3.23	489
2,000-2,999.9-----	10	22,898.0	17,205	10	22,898.0	17,205	3.55	610	---	---	---	---	---	---
3,000 and more-----	4	13,981.9	14,937	4	13,981.9	14,937	3.74	558	---	---	---	---	---	---
Total or average--	53,826	4,078,151.8	15,233	53,459	4,004,049.4	15,274	3.67	560	14,149	1,010,375.2	15,585	569	3.21	500
Jersey														
5- 24.9-----	372	5,750.6	10,074	372	5,750.6	10,074	4.82	486	174	2,711.3	10,370	505	3.79	393
25- 49.9-----	660	24,479.2	10,183	660	24,479.2	10,183	4.84	493	246	9,160.0	10,479	510	3.78	397
50- 74.9-----	366	22,242.2	10,394	366	22,242.2	10,394	4.87	506	156	9,442.2	10,518	516	3.85	405
75- 99.9-----	197	16,993.7	10,516	196	16,908.8	10,520	4.84	510	86	7,464.9	10,992	535	3.86	424
100- 149.9-----	165	20,033.5	10,847	165	20,033.5	10,847	4.87	529	80	9,727.8	11,323	556	3.87	438
150- 199.9-----	65	11,149.6	10,652	63	10,832.9	10,703	4.87	522	29	5,029.8	11,077	552	3.91	433
200- 299.9-----	47	11,158.7	11,068	46	10,932.8	11,212	4.86	545	27	6,224.1	11,712	570	3.86	452
300- 399.9-----	14	4,622.7	11,033	14	4,622.7	11,033	4.98	549	10	3,286.9	11,128	562	3.82	425
400- 499.9-----	9	3,979.6	11,339	9	3,979.6	11,339	5.07	575	7	3,134.2	11,602	583	3.91	454
500- 749.9-----	7	4,177.2	10,712	7	4,177.2	10,712	5.04	540	5	3,006.3	10,094	504	3.99	403
750- 999.9-----	1	984.5	12,345	1	984.5	12,345	4.79	591	---	---	---	---	---	---
Total or average--	1,903	125,571.5	10,589	1,899	124,944.0	10,606	4.87	517	820	59,187.5	10,940	538	3.86	422
Milking Shorthorn														
5- 24.9-----	39	559.8	10,738	39	559.8	10,738	3.67	395	8	94.1	12,061	442	3.33	402
25- 49.9-----	42	1,515.4	10,563	42	1,515.4	10,563	3.69	389	5	168.1	11,041	420	3.22	356
50- 74.9-----	12	730.5	11,323	12	730.5	11,323	3.67	416	2	119.0	12,098	454	3.17	384
75- 99.9-----	4	326.6	10,565	4	326.6	10,565	3.83	405	1	79.0	10,169	377	3.44	350
100- 149.9-----	3	345.8	11,422	3	345.8	11,422	3.53	403	1	142.5	12,453	443	3.34	416
Total or average--	100	3,478.1	10,837	100	3,478.1	10,837	3.68	399	17	602.7	11,628	430	3.29	382

Table 8.--National cow-year totals and averages for all official and nonofficial herd records by breed and herd size, 1982--Continued

Herd size (number)	Records with milk			Records with fat					Records with protein					
	Herds	Cow-years	Milk	Herds	Cow-years	Milk	Fat	Fat	Herds	Cow-years	Milk	Fat	Protein	Protein
	Number	Number	Pounds	Number	Number	Pounds	Percent	Pounds	Number	Number	Pounds	Pounds	Percent	Pounds
Red and White														
5- 24.9-----	2	44.1	13,372	2	44.1	13,372	4.25	568	---	---	---	---	---	---
25- 49.9-----	16	632.5	14,107	16	632.5	14,107	3.66	516	8	317.5	14,636	531	3.15	461
50- 74.9-----	8	489.4	15,518	8	489.4	15,518	3.76	583	2	122.3	15,419	596	3.27	504
75- 99.9-----	3	265.6	14,701	3	265.6	14,701	3.81	560	1	84.4	14,757	588	3.12	461
100- 149.9-----	3	338.3	17,479	3	338.3	17,479	3.40	595	2	215.7	16,877	589	3.28	553
150- 199.9-----	1	167.0	18,037	1	167.0	18,037	3.59	647	---	---	---	---	---	---
Total or average--	33	1,936.9	15,456	33	1,936.9	15,456	3.66	565	13	739.9	15,432	565	3.21	495
Mixed breed														
5- 24.9-----	191	3,208.1	11,807	191	3,208.1	11,807	3.96	467	46	687.5	12,078	486	3.35	405
25- 49.9-----	479	17,810.8	12,086	478	17,766.5	12,088	3.95	477	78	2,858.5	12,556	506	3.35	420
50- 74.9-----	205	12,333.9	12,574	204	12,271.6	12,572	3.87	486	33	2,042.9	13,375	522	3.40	455
75- 99.9-----	116	9,943.4	12,735	115	9,851.4	12,746	3.90	497	33	2,760.7	13,064	514	3.39	443
100- 149.9-----	89	10,750.3	12,526	86	10,387.9	12,570	3.84	483	22	2,615.7	13,361	514	3.44	460
150- 199.9-----	33	5,797.1	12,833	33	5,797.1	12,833	3.86	495	13	2,270.2	12,622	487	3.42	432
200- 299.9-----	13	2,900.0	13,315	12	2,648.0	13,402	3.89	521	1	202.2	10,996	421	3.47	382
300- 399.9-----	6	1,989.4	13,202	6	1,989.4	13,202	3.77	498	1	312.7	12,748	460	3.44	439
400- 499.9-----	3	1,303.9	12,253	3	1,303.9	12,253	4.02	493	1	447.7	11,082	469	3.42	379
500- 749.9-----	2	1,210.6	15,680	2	1,210.6	15,680	3.59	563	---	---	---	---	---	---
750- 999.9-----	2	1,705.9	14,672	1	896.2	14,863	3.08	458	---	---	---	---	---	---
1,000-1,249.9-----	1	1,050.8	17,346	1	1,050.8	17,346	3.60	624	---	---	---	---	---	---
Total or average--	1,140	70,004.2	12,671	1,132	68,381.5	12,660	3.87	490	228	14,198.1	12,844	504	3.40	437
All breeds														
5- 24.9-----	4,006	73,942.4	13,285	4,001	73,830.1	13,282	3.84	510	1,127	19,697.6	13,274	525	3.28	435
25- 49.9-----	23,701	911,625.1	14,315	23,667	910,312.7	14,316	3.77	539	6,030	234,163.6	14,536	551	3.19	464
50- 74.9-----	15,965	969,165.6	14,780	15,913	965,948.4	14,784	3.73	552	4,564	277,418.4	15,171	567	3.21	487
75- 99.9-----	6,792	582,877.2	14,837	6,750	579,290.5	14,847	3.70	549	1,943	166,447.1	15,246	566	3.24	494
100- 149.9-----	4,976	595,209.0	14,953	4,898	585,534.7	14,991	3.68	551	1,475	177,062.9	15,440	571	3.26	504
150- 199.9-----	1,697	291,078.8	14,882	1,642	281,593.4	14,948	3.68	549	525	90,271.1	15,552	571	3.28	511
200- 299.9-----	1,198	287,693.3	15,218	1,153	276,826.6	15,323	3.66	561	348	82,845.7	15,734	574	3.31	520
300- 399.9-----	451	154,303.7	15,390	433	148,227.2	15,497	3.66	567	109	37,325.2	15,635	576	3.32	519
400- 499.9-----	255	114,096.7	15,998	241	107,664.8	16,181	3.69	596	42	18,886.5	15,439	579	3.36	519
500- 749.9-----	281	168,745.7	16,433	257	154,062.5	16,747	3.67	615	23	13,419.7	15,280	565	3.40	520
750- 999.9-----	103	88,511.9	16,667	92	79,233.2	17,095	3.68	628	7	6,349.1	15,164	551	3.31	502
1,000-1,249.9-----	53	58,296.5	17,621	53	58,296.5	17,621	3.60	635	2	2,124.9	19,830	654	3.34	662
1,250-1,499.9-----	26	36,052.3	17,260	26	36,052.3	17,260	3.61	624	---	---	---	---	---	---
1,500-1,999.9-----	17	28,881.0	16,341	16	27,253.7	16,429	3.64	597	2	3,510.3	15,124	547	3.23	489
2,000-2,999.9-----	10	22,898.0	17,205	10	22,898.0	17,205	3.55	610	---	---	---	---	---	---
3,000 and more----	4	13,981.9	14,937	4	13,981.9	14,937	3.74	558	---	---	---	---	---	---
Total or average--	59,535	4,397,359.1	14,961	59,156	4,321,006.5	14,996	3.71	556	16,197	1,129,522.1	15,161	565	3.24	492

Table 9.--Numbers of herds and cow-years by breed and plan, 1982

Plan ¹	Ayrshire		Brown Swiss		Guernsey		Holstein		Jersey		Milking Shorthorn		Red and White		Mixed breed	
	Herds	Cow-years	Herds	Cow-years	Herds	Cow-years	Herds	Cow-years	Herds	Cow-years	Herds	Cow-years	Herds	Cow-years	Herds	Cow-years
OHI-----	261	10,278.3	200	7,822.7	565	27,833.1	25,536	2,153,308.9	794	50,751.5	29	903.0	23	1,422.3	536	33,342.0
OHI-AP-----	2	117.7	11	485.6	17	769.2	1,374	116,365.2	25	2,400.0	---	---	---	---	30	1,725.3
OHI-APCS-----	9	619.7	11	780.7	34	2,773.7	2,580	304,376.7	118	12,283.6	---	---	1	122.6	96	8,975.2
OHIR-----	137	6,892.0	326	16,752.4	302	18,476.1	3,791	341,902.6	511	34,338.6	60	2,244.1	1	105.7	82	5,832.9
OHIR-AP-----	1	192.4	---	---	1	165.8	1	62.4	2	231.9	---	---	---	---	---	---
OHIR-APCS-----	1	53.6	10	711.4	19	1,499.3	3	1,889.6	86	11,264.5	---	---	---	---	11	2,157.3
OS-----	54	1,831.1	98	2,976.5	338	11,717.6	13,200	627,190.7	270	9,702.1	9	295.0	5	173.2	239	8,832.2
OS-AP-----	7	209.6	8	303.8	38	1,589.6	2,801	145,360.7	20	631.6	1	20.8	1	37.9	43	1,839.9
OS-APCS-----	---	---	---	---	1	79.2	52	3,821.6	5	519.5	---	---	---	---	2	122.6
OS-MO-----	---	---	2	87.9	1	35.0	413	49,377.8	---	---	---	---	---	---	7	815.3
OS-MO-AP-----	---	---	---	---	---	---	65	6,905.2	1	39.1	---	---	---	---	---	---
OS-ACT-----	---	---	---	---	---	---	63	6,891.8	---	---	---	---	---	---	2	145.7
OS-AP-ACT-----	---	---	---	---	---	---	1	72.3	---	---	---	---	---	---	---	---
OS-TCT-----	---	---	---	---	1	108.0	20	1,147.0	1	61.0	---	---	---	---	---	---
OS-MO-TMW-----	---	---	---	---	---	---	3	319.0	---	---	---	---	---	---	---	---
Comm-----	---	---	---	---	---	---	129	41,912.1	6	818.7	---	---	---	---	7	681.7
Comm-AP-----	---	---	1	23.1	---	---	98	9,820.5	2	298.6	---	---	---	---	4	753.6
SS-AP-----	30	1,184.0	20	723.9	27	1,123.6	3,445	211,468.3	58	1,603.3	1	15.2	2	75.2	76	3,373.8
SS-MO-----	---	---	---	---	---	---	236	53,478.1	---	---	---	---	---	---	---	---
SS-MO-AP-----	---	---	---	---	---	---	15	2,481.3	4	627.5	---	---	---	---	5	1,406.7

¹ OHI = Official OHI; OHI-AP = Official OHI AM-PM with Monitoring Device; OHI-APCS = Official OHI with Alternate AM-PM Component Sampling; OHIR = Official OHIR; OHIR-AP = Official OHIR AM-PM with Monitoring Device; OHIR-APCS = Official OHIR with Alternate AM-PM Component Sampling; OS = Owner-Sampler; OS-AP = Owner-Sampler AM-PM; OS-APCS = Owner-Sampler with Alternate AM-PM Component Sampling; OS-MO = Owner-Sampler Milk Only; OS-MO-AP = Owner-Sampler AM-PM Milk Only; OS-ACT = Owner-Sampler with Average (Breed or Plant) Components Used; OS-AP-ACT = Owner-Sampler AM-PM with Average (Breed or Plant) Components Used; OS-TCT = Owner-Sampler with Trimonthly Component Tests; OS-MO-TMW = Owner-Sampler Milk Only with Trimonthly Milk Weights; Comm = Commercial; Comm-AP = Commercial AM-PM; SS-AP = Supervised Sampling AM-PM; SS-MO = Supervised Sampling Milk Only; and SS-MO-AP = Supervised Sampling AM-PM Milk Only.

Table 10.--National cow-year totals and averages for all official and nonofficial herd records for milk, fat, and protein by plan, 1982

Plan ¹	Records with milk			Records with fat					Records with protein				
	Herds	Cow-years	Milk	Herds	Cow-years	Milk	Fat	Fat	Herds	Cow-years	Milk	Protein	Protein
OHI-----	27,944	2,285,661.8	15,442	27,937	2,284,610.1	15,443	3.69	569	7,236	572,711.8	15,616	3.24	506
OHI-AP-----	1,459	121,863.0	14,872	1,459	121,863.0	14,872	3.67	546	41	3,619.0	13,231	3.36	445
OHI-APCS-----	2,849	329,932.2	13,275	2,825	325,790.3	13,275	3.55	472	394	52,100.1	13,428	3.40	457
OHIR-----	5,210	426,544.4	16,185	5,210	426,544.4	16,185	3.79	613	2,014	144,706.7	15,693	3.33	523
OHIR-AP-----	5	652.5	12,217	5	652.5	12,217	4.39	536	3	397.7	11,392	3.86	440
OHIR-APCS-----	130	17,575.7	11,890	130	17,575.7	11,890	4.33	514	39	5,637.4	11,929	3.79	453
OS-----	14,213	662,718.4	14,139	14,171	660,498.7	14,139	3.82	541	3,830	176,977.0	14,331	3.18	456
OS-AP-----	2,919	149,993.9	13,866	2,913	149,614.2	13,864	3.80	527	581	32,615.7	14,090	3.17	447
OS-APCS-----	60	4,542.9	13,402	60	4,542.9	13,402	3.74	501	14	1,142.0	14,293	3.30	472
OS-MO-----	423	50,316.0	14,017	346	33,683.6	14,406	3.60	518	1	18.9	12,021	3.08	370
OS-MO-AP-----	66	6,944.3	14,292	61	5,862.4	14,550	3.56	517	---	---	---	---	---
OS-ACT-----	65	7,037.5	13,638	65	7,037.5	13,638	3.65	498	---	---	---	---	---
OS-AP-ACT-----	1	72.3	12,709	1	72.3	12,709	3.78	481	---	---	---	---	---
OS-TCT-----	22	1,316.0	15,109	22	1,316.0	15,109	3.80	574	---	---	---	---	---
OS-MO-TMW-----	3	319.0	14,051	3	319.0	14,051	3.63	511	---	---	---	---	---
Comm-----	142	43,412.5	15,285	142	43,412.5	15,285	3.66	560	52	8,995.9	15,130	3.32	503
Comm-AP-----	105	10,895.8	14,592	105	10,895.8	14,592	3.66	533	32	2,889.1	14,975	3.12	467
SS-AP-----	3,659	219,567.3	14,431	3,659	219,567.3	14,431	3.60	520	1,959	127,367.8	14,873	3.14	467
SS-MO-----	245	55,512.3	12,911	28	4,767.4	14,006	3.63	509	---	---	---	---	---
SS-MO-AP-----	15	2,481.3	14,270	14	2,380.9	14,567	3.56	519	1	343.0	14,607	3.66	534
Total or average--	59,535	4,397,359.1	14,961	59,156	4,321,006.5	14,996	3.71	556	16,197	1,129,522.1	15,161	3.24	492

¹ OHI = Official OHI; OHI-AP = Official OHI AM-PM with Monitoring Device; OHI-APCS = Official OHI with Alternate AM-PM Component Sampling; OHIR = Official OHIR; OHIR-AP = Official OHIR AM-PM with Monitoring Device; OHIR-APCS = Official OHIR with Alternate AM-PM Component Sampling; OS = Owner-Sampler; OS-AP = Owner-Sampler AM-PM; OS-APCS = Owner-Sampler with Alternate AM-PM Component Sampling; OS-MO = Owner-Sampler Milk Only; OS-MO-AP = Owner-Sampler AM-PM Milk Only; OS-ACT = Owner-Sampler with Average (Breed or Plant) Components Used; OS-AP-ACT = Owner-Sampler AM-PM with Average (Breed or Plant) Components Used; OS-TCT = Owner-Sampler with Trimonthly Component Tests; OS-MO-TMW = Owner-Sampler Milk Only with Trimonthly Milk Weights; Comm = Commercial; Comm-AP = Commercial AM-PM; SS-AP = Supervised Sampling AM-PM; SS-MO = Supervised Sampling Milk Only; and SS-MO-AP = Supervised Sampling AM-PM Milk Only.

Table 11.--Numbers of herds and cow-years by dairy records processing center (DRPC) for all official and nonofficial herds with cows milked 3 times a day (3X), 1982

DRPC	Herds		Cow-years	
	Number	Percent	Number	Percent
California-----	82	9.4	26,223.7	9.0
Iowa-----	99	1.3	10,094.7	2.2
Michigan-----	147	6.5	17,572.0	10.4
Minnesota-----	111	1.7	7,284.6	2.2
New York-----	360	4.0	40,521.8	6.9
North Carolina ---	203	3.2	38,589.4	5.7
Pennsylvania ¹ ----	---	---	---	---
Utah -----	580	9.6	149,256.6	18.4
Wisconsin -----	263	1.8	19,334.9	2.5
United States ² ----	1,845	3.4	308,877.7	7.6

¹ No 3X reporting.

² Pennsylvania data excluded from U.S. total number of herds when calculating U.S. percentages milked 3X.

Table 12.--Summary of cow-year totals and averages for all official herd records, 1939-82¹

Test year	Herds	Cow-years	Cow-years per herd	Days in milk	Milk	Fat	Fat
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Percent</i>	<i>Pounds</i>	<i>Percent</i>	<i>Pounds</i>
1939-40-----	---	545,382	---	---	8,133	4.07	331
1940-41-----	---	591,103	---	---	8,225	4.07	335
1941-42-----	---	514,758	---	---	8,323	4.07	339
1942-43-----	---	375,914	---	---	8,325	4.06	338
1943-44-----	---	383,337	---	---	8,296	4.05	336
1944-45-----	---	384,360	---	---	8,592	4.03	346
1945-46-----	---	413,554	---	---	8,635	4.04	349
1946-47-----	---	533,061	---	---	8,638	4.03	348
1947-48-----	---	620,385	---	---	8,675	4.03	350
1948-49-----	---	729,150	---	---	8,907	4.03	359
1949-50-----	---	836,922	---	---	9,172	4.03	370
1950-51-----	---	885,859	---	---	9,195	4.02	370
1951-52-----	---	928,376	---	---	9,192	3.98	366
1952-53-----	---	1,020,326	---	---	9,253	3.98	368
1953-54-----	---	1,079,557	---	---	9,363	3.97	372
1954-55-----	---	1,175,378	---	---	9,502	3.95	375
1955-56-----	---	1,229,971	---	---	9,713	3.94	383
1956-57-----	---	1,256,129	---	---	9,894	3.93	389
1957-58-----	---	1,345,750	---	---	10,068	3.91	394
1958-59-----	---	1,406,665	---	---	10,327	3.88	401
1959-60-----	---	1,343,725	---	---	10,561	3.87	409
1960-61-----	28,649	1,280,785	44.7	---	10,796	3.87	418
1961-62-----	32,794	1,531,826	46.7	---	11,032	3.86	426
1962-63-----	35,378	1,674,803	47.3	---	11,286	3.85	434
1963-64-----	35,689	1,746,475	48.9	---	11,685	3.83	447
1964-65-----	35,604	1,821,252	51.2	---	11,976	3.82	457
1965-66-----	34,886	1,852,533	53.1	---	12,127	3.81	462
1966-67-----	34,515	1,890,024	54.8	---	12,307	3.80	468
1967-68-----	33,560	1,924,200	57.3	85	12,397	3.80	471
1968-69-----	33,130	1,959,647	59.2	85	12,553	3.79	476
1969-70-----	31,138	1,937,390	62.2	85	12,750	3.79	483
1970-71-----	30,699	1,995,463	65.0	85	13,000	3.76	489
1971-72-----	30,190	2,050,132	67.9	85	13,226	3.75	496
1972-73-----	30,826	2,177,626	70.6	85	13,287	3.76	499
1973-74-----	30,280	2,221,349	73.4	85	13,163	3.75	493
1974-75-----	29,543	2,216,817	75.0	85	13,421	3.76	505
1975-76-----	29,634	2,240,752	75.6	86	13,632	3.75	511
1976-77-----	30,764	2,373,261	77.1	86	14,435	3.73	539
1977-78-----	31,783	2,476,946	77.9	86	14,631	3.70	542
1978-79-----	32,831	2,571,361	78.3	86	14,644	3.70	542
1979-80-----	34,449	2,771,379	80.4	85	14,786	3.70	547
1980 ² -----	35,206	2,867,177	81.4	86	14,960	3.70	553
1981-----	36,691	3,044,386	83.0	86	15,137	3.69	558
1982-----	37,548	3,175,552	84.6	86	15,280	3.69	564

¹ National test year was established to begin May 1 in 1960. No report was prepared in 1960; therefore, averages of data for 1959 and 1960 were used. In previous years, beginning date varied by State.

² National test year changed to calendar year in fall of 1980. Data included are from records ending any time in 1980. Data for 1980 overlap 1979-80 data by one-third.

Table 13.--Summary of cow-year totals and averages for all official herd records with feeding and other information reported, 1939-82¹

Test year	Herds	Cow-years	Cow-years per herd	Days in milk	Milk	Fat	Fat	Concentrate	Succulent forage	Dry forage	Pasture days	Cost of concentrate	Feed cost	Feed cost/cwt milk	Value of product	Income over feed cost
	Number	Number	Number	Percent	Pounds	Percent	Pounds	Cwt	Cwt	Cwt	Number	Dol	Dol	Dol	Dol	Dol
1939-40---	19,330	467,775	24.2	---	8,049	4.05	326	---	---	---	---	32	68	0.84	165	97
1940-41---	20,590	500,340	24.3	---	8,182	4.06	332	---	---	---	---	34	70	.86	176	106
1941-42---	17,341	430,057	24.8	---	8,271	4.06	336	---	---	---	---	42	82	.99	206	124
1942-43---	12,006	306,142	25.5	---	8,219	4.06	334	---	---	---	---	53	99	1.20	245	146
1943-44---	11,433	308,678	27.0	---	8,141	4.05	330	---	---	---	---	63	118	1.45	274	156
1944-45---	11,204	304,748	27.2	---	8,434	4.02	339	---	---	---	---	68	128	1.49	302	174
1945-46---	11,795	318,461	27.0	---	8,440	4.05	342	---	---	---	---	70	130	1.54	314	184
1946-47---	15,566	418,738	26.9	---	8,454	4.02	340	---	---	---	---	79	141	1.67	352	211
1947-48---	18,573	494,036	26.6	---	8,429	4.01	338	---	---	---	---	95	165	1.96	388	223
1948-49---	22,312	586,815	26.3	---	8,701	4.02	350	---	---	---	---	85	156	1.79	390	234
1949-50---	24,841	675,685	27.2	---	8,949	4.01	359	---	---	---	---	76	147	1.64	359	212
1950-51---	26,134	721,311	27.6	---	8,983	4.02	361	---	---	---	---	81	154	1.71	370	216
1951-52---	26,423	768,916	29.1	---	9,015	3.97	358	---	---	---	---	87	165	1.83	399	234
1952-53---	18,557	525,346	28.3	---	9,069	3.96	359	30	56	37	168	101	194	2.14	461	267
1953-54---	26,834	748,234	27.9	---	9,117	3.96	361	28	55	37	174	93	188	2.06	434	246
1954-55---	28,727	822,254	28.6	---	9,261	3.94	365	28	61	37	178	89	183	1.98	429	246
1955-56---	28,254	849,344	30.1	---	9,470	3.93	372	29	64	39	174	86	181	1.91	433	252
1956-57---	27,133	863,775	31.8	---	9,621	3.92	377	30	66	39	173	88	183	1.90	448	265
1957-58---	27,525	900,269	32.7	---	9,787	3.91	383	31	69	40	171	92	190	1.94	462	272
1958-59---	27,796	902,074	32.5	---	10,042	3.89	391	33	75	40	174	93	195	1.94	475	280
1959-60---	23,220	795,892	34.3	---	10,045	3.89	391	33	76	40	169	93	196	1.95	479	283
1960-61---	18,644	689,710	37.0	---	10,048	3.88	390	32	78	39	163	94	198	1.97	485	287
1961-62---	22,853	882,827	38.6	---	10,676	3.87	413	36	82	40	175	103	207	1.94	502	295
1962-63---	27,093	1,089,290	40.2	84	10,983	3.85	423	39	92	40	156	113	222	2.02	501	279
1963-64---	27,893	1,173,099	42.1	84	11,428	3.84	439	42	98	38	151	120	237	2.07	521	284
1964-65---	28,237	1,229,676	43.5	85	11,744	3.82	449	44	102	38	151	127	244	2.08	539	295
1965-66---	28,013	1,260,621	45.0	85	11,885	3.81	453	45	108	36	114	133	256	2.15	559	303
1966-67---	27,483	1,282,357	46.7	85	12,030	3.82	459	47	113	36	---	143	265	2.20	631	366
1967-68---	25,447	1,257,600	49.4	85	12,121	3.81	462	48	120	34	134	149	271	2.27	667	395
1968-69---	25,208	1,271,983	50.5	85	12,223	3.80	465	49	---	33	132	146	266	2.21	700	434
1969-70---	23,130	1,227,860	53.1	85	12,428	3.79	471	50	124	32	129	153	273	2.23	736	463
1970-71---	22,824	1,240,414	54.3	85	12,659	3.77	477	51	116	33	120	165	287	2.30	767	480
1971-72---	20,987	1,211,464	57.7	85	12,775	3.75	479	52	116	30	122	174	301	2.39	791	490
1972-73---	22,628	1,322,782	58.5	85	12,801	3.76	481	52	118	30	113	187	321	2.54	821	500
1973-74---	20,083	1,217,462	60.6	85	12,604	3.74	472	51	118	29	116	262	422	3.40	989	567
1974-75---	20,444	1,297,541	63.5	85	13,024	3.76	489	51	123	29	110	318	527	4.11	1,114	587
1975-76---	20,470	1,318,140	64.4	86	13,326	3.74	498	52	126	28	113	315	557	4.23	1,229	672
1976-77---	17,642	1,210,810	68.6	86	13,849	3.75	519	55	129	28	112	358	609	4.46	1,371	762
1977-78---	18,392	1,299,256	70.6	86	13,978	3.71	518	57	126	28	113	355	612	4.44	1,404	792
1978-79---	18,587	1,310,083	70.5	86	14,129	3.70	522	58	126	30	109	372	629	4.49	1,555	927
1979-80---	18,473	1,282,145	69.4	86	14,227	3.69	525	59	128	30	107	411	677	4.75	1,750	1,073
1980 ² ----	18,272	1,280,895	70.1	86	14,359	3.69	530	59	126	31	87	437	715	4.90	1,851	1,136
1981-----	19,782	1,433,366	72.5	85	14,553	3.68	535	60	120	32	(³)	494	800	5.59	2,008	1,208
1982-----	19,764	1,448,568	73.3	85	14,588	3.67	535	61	90	28	95	459	773	5.40	1,992	1,218

¹ Prior to 1952, individual feeds were not reported. Only cows and herds from States reporting feeding and other information were included.

² National test year changed to calendar year in fall of 1980. Data included are from records ending any time in 1980. Data for 1980 overlap 1979-80 data by one-third.

³ Pasture days not reported because value based only on records with pasture days >0.

Table 14.--Summary of cow-year totals and averages for all nonofficial herd records, 1962-82

Test year	Herds	Cow-years	Cow-years per herd	Days in milk	Milk	Fat	Fat
	Number	Number	Number	Percent	Pounds	Percent	Pounds
1962-63-----	14,761	423,545	28.7	---	10,606	3.73	396
1963-64-----	13,574	385,493	28.4	---	10,885	3.71	404
1964-65-----	18,409	559,608	30.4	---	11,402	3.71	423
1965-66-----	19,172	598,133	31.2	---	11,472	3.70	425
1966-67-----	17,912	575,816	32.1	---	11,607	3.72	432
1967-68-----	17,318	592,647	34.2	84	11,847	3.72	441
1968-69-----	17,908	614,939	34.3	84	11,932	3.72	444
1969-70-----	16,971	611,819	36.1	84	12,185	3.72	453
1970-71-----	16,569	612,080	36.9	84	12,413	3.71	460
1971-72-----	16,107	618,088	38.4	84	12,544	3.74	466
1972-73-----	16,183	631,269	39.0	84	12,488	3.75	468
1973-74-----	16,037	639,964	39.9	85	12,353	3.75	463
1974-75-----	14,704	610,910	41.5	85	12,503	3.80	475
1975-76-----	16,784	753,089	44.9	85	13,104	3.79	497
1976-77-----	17,662	815,988	46.2	85	13,539	3.76	509
1977-78-----	18,675	891,738	47.8	85	13,771	3.75	516
1978-79-----	19,248	933,631	48.5	85	13,847	3.77	522
1979-80-----	19,328	953,595	49.3	85	13,969	3.77	527
1980 ¹ -----	19,617	980,870	50.0	85	14,080	3.76	529
1981-----	21,037	1,105,418	52.5	85	14,177	3.74	530
1982 ² -----	21,585	1,143,728	53.0	85	14,213	3.76	534

¹ National test year changed to calendar year in fall of 1980. Data included are from records ending any time in 1980. Data for 1980 overlap 1979-80 data by one-third.

² Averages for fat yield and fat percentage are calculated from fewer records than is milk average. Milk average for records with fat can be calculated by dividing fat yield by fat percentage.

Table 15.--Summary of cow-year totals and averages for all nonofficial herd records with feeding and other information reported, 1962-81

Test year	Herds	Cow-years	Cow-years per herd	Days in milk	Milk	Fat	Fat	Con- centrate	Succu- ent for- age	Dry for- age	Pas- ture days	Cost of concen- trate	Feed cost/ cwt milk	Value of product	Income over feed cost
	Number	Number	Number	Percent	Pounds	Percent	Pounds	Cwt	Cwt	Cwt	Number	Dol	Dol	Dol	Dol
1962-63---	4,165	136,781	32.8	83	10,785	3.72	402	37	83	46	147	113	219	2.03	460
1963-64---	3,033	80,172	26.4	83	10,987	3.74	411	40	80	44	143	103	204	1.86	223
1964-65---	6,355	197,385	31.0	84	11,470	3.72	427	41	89	44	---	119	228	1.99	258
1965-66---	7,096	224,616	31.6	84	11,574	3.72	430	42	95	42	---	121	237	2.05	262
1966-67---	7,537	243,943	32.4	84	11,645	3.72	433	43	98	43	---	130	242	2.08	321
1967-68---	5,928	212,380	35.8	84	11,834	3.72	440	44	103	40	130	142	259	2.21	357
1968-69---	7,614	263,703	34.6	84	11,953	3.71	443	46	---	41	123	133	243	2.05	391
1969-70---	7,134	259,195	36.3	84	12,102	3.69	446	47	104	40	116	139	249	2.08	417
1970-71---	6,792	254,890	37.5	84	12,292	3.68	452	48	93	39	106	147	258	2.11	439
1971-72---	6,324	246,148	38.9	84	12,327	3.67	453	49	90	38	106	152	265	2.17	444
1972-73---	6,570	257,026	39.1	84	12,214	3.71	453	49	94	38	96	156	277	2.30	450
1973-74---	6,125	247,527	40.4	84	12,151	3.69	448	48	94	38	97	217	367	3.05	533
1974-75---	5,562	234,692	42.2	84	12,303	3.72	458	47	103	38	90	271	478	3.93	489
1975-76---	7,079	326,135	46.1	85	12,980	3.71	481	49	110	37	92	283	540	4.20	610
1976-77---	5,605	280,566	50.1	85	13,166	3.71	488	50	112	33	95	315	563	4.32	703
1977-78---	5,876	300,951	51.2	85	13,448	3.68	495	51	116	32	94	311	569	4.27	738
1978-79---	6,014	309,028	51.4	85	13,695	3.69	505	53	118	33	84	326	581	4.27	891
1979-80---	6,173	320,172	51.9	85	13,864	3.65	506	53	120	33	83	364	622	4.52	1,037
1980 ¹ ----	6,428	337,846	52.6	85	13,945	3.65	509	53	120	34	76	382	648	4.66	1,100
1981-----	7,726	432,155	55.9	85	14,114	3.63	512	58	129	34	(²)	456	740	5.37	1,160
1982-----	7,783	496,580	63.8	85	14,039	3.20	449	59	110	30	76	430	723	5.28	1,155

¹ National test year changed to calendar year in fall of 1980. Data included are from records ending any time in 1980. Data for 1980 overlap 1979-80 by one-third.

² Pasture days not reported because value based only on records with pasture days 0.

Table 16.--Comparison of yield of cows on official test, nonofficial test, and all other cows, 1962-82

Test year	Official				Nonofficial				All other cows ²			Superiority of official cows		Superiority of non-official cows	
	Herds	Cow-years ¹	Milk	Fat	Herds	Cow-years ¹	Milk	Fat	Cow-years ²	Milk ²	Fat ²	Milk	Fat	Milk	Fat
	Number	Number	Pounds	Pounds	Number	Number	Pounds	Pounds	Number	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
1962-63---	41,937	2,006,534	11,286	434	25,376	726,478	10,606	396	13,817,988	6,844	255	4,442	179	3,762	141
1963-64---	40,670	2,010,144	11,685	447	25,598	752,229	10,885	404	13,206,127	7,148	263	4,537	184	3,737	141
1964-65---	40,075	2,087,581	11,976	457	26,604	818,406	11,402	423	12,409,013	7,353	270	4,623	187	4,049	153
1965-66---	38,879	2,058,592	12,127	462	26,259	839,839	11,472	425	11,613,569	7,530	276	4,597	186	3,942	149
1966-67---	37,683	2,098,919	12,307	468	25,439	825,127	11,607	432	10,818,954	7,756	292	4,551	176	3,851	140
1967-68---	36,869	2,131,929	12,397	471	25,143	847,485	11,847	441	10,144,086	8,035	292	4,362	179	3,812	149
1968-69---	35,617	2,138,953	12,553	476	24,359	842,330	11,932	444	9,588,217	8,319	311	4,234	165	3,613	133
1969-70---	34,308	2,122,011	12,750	483	23,281	839,343	12,185	453	9,101,646	8,701	315	4,049	168	3,484	138
1970-71---	33,996	2,218,402	13,000	489	22,581	836,751	12,413	460	8,853,847	8,848	320	4,152	169	3,565	140
1971-72---	33,197	2,244,685	13,226	496	21,345	805,555	12,544	466	8,725,760	9,135	332	4,091	164	3,409	134
1972-73---	33,578	2,359,611	13,287	499	20,895	806,270	12,488	468	8,456,119	9,155	332	4,132	167	3,333	136
1973-74---	33,146	2,416,669	13,163	493	19,738	783,195	12,353	463	8,097,136	9,047	328	4,116	165	3,306	135
1974-75---	32,222	2,432,961	13,421	505	18,112	749,807	12,503	475	8,037,232	9,146	332	4,275	173	3,357	143
1975-76---	32,232	2,438,365	13,632	511	20,010	945,101	13,104	497	7,703,534	9,248	336	4,384	175	3,856	161
1976-77---	33,755	2,581,164	14,435	539	21,000	1,006,359	13,539	509	7,443,477	9,452	342	4,983	197	4,087	167
1977-78---	34,971	2,704,064	14,631	542	22,768	1,159,776	13,771	516	7,075,160	9,592	341	5,039	201	4,179	175
1978-79---	36,105	2,792,175	14,644	542	22,745	1,201,500	13,847	522	6,845,325	9,434	344	5,210	198	4,413	178
1979-80---	37,526	2,966,558	14,786	547	22,943	1,225,311	13,969	527	6,882,131	10,247	369	4,539	178	3,722	158
1980 ³ ----	39,524	3,197,353	14,960	553	23,451	1,282,715	14,080	529	6,654,932	9,991	359	4,969	194	4,089	170
1981-----	40,933	3,382,977	15,137	558	24,910	1,407,203	14,177	530	6,132,820	10,085	358	5,052	200	4,092	172
1982-----	41,029	3,431,507	15,280	564	25,173	1,406,677	14,213	534	6,187,816	10,241	364	5,039	200	3,972	170

¹ Number of herds and cow-years is enrollment Jan. 1 of second year through 1979-80 and for 1981 in testing year 1980 as reported in the annual participation reports. Number of all cows used in this table included Puerto Rico and Virgin Islands for first time in 1979-80. Figures for enrollment for 1978-79 are different from those in 1979 participation report because of a reporting error. Yield is from these herd average reports.

² Derived from national cow population and yield figures, excluding heifers not fresh. See Dairy Herd Impr. Ltr. 55(2) for years before 1979; see successive February issues of "Milk Production" and "Cattle" distributed by the Economics, Statistics, and Cooperatives Service, USDA, for 1979 and later.

³ Since 1969-70, cow-years were calculated by subtracting Jan. 1 enrollment of tested cows from Jan. 1 estimate of all cows.

⁴ See Dairy Herd Impr. Ltr. 55(2) for calculation of milk yield before 1975-76. Beginning with 1975-76, yield values for cows on all testing plans that include butterfat testing were subtracted from national values.

⁵ National test year changed to calendar year in fall of 1980. Data included are from records ending any time in 1980. Data for 1980 overlap 1979-80 data by one-third.

Table 17.--Yield and value of product for all national milk cows for selected years, 1940-82¹

Year	Average number of milk cows ²		Average yield per cow			Total milk produced	Total fat produced	Total farm value of milk produced
	Annual	December	Milk	Fat	Fat			
	Thousands	Thousands	Pounds	Percent	Pounds	Million pounds	Million pounds	Thousand dol
1940-----	23,671	---	4,622	3.97	183	109,412	4,343	1,930,935
1942-----	25,027	---	4,736	3.97	188	118,533	4,704	2,867,340
1944-----	25,597	---	4,572	3.98	182	117,023	4,657	3,567,852
1946-----	24,089	---	4,886	3.97	194	117,697	4,677	4,512,653
1948-----	22,336	---	5,044	3.97	200	112,671	4,478	5,295,194
1950-----	21,944	---	5,314	3.96	210	116,602	4,618	4,431,995
1952-----	21,338	---	5,374	3.90	210	114,671	4,476	5,425,543
1954-----	21,581	---	5,657	3.86	219	122,094	4,717	4,757,279
1956-----	20,501	---	6,090	3.82	233	124,860	4,773	5,075,318
1958-----	18,711	---	6,585	3.78	249	123,220	4,658	5,037,729
1960-----	17,515	---	7,029	3.76	264	123,109	4,628	5,158,116
1962-----	16,842	---	7,496	3.74	280	126,251	4,718	5,182,148
1964-----	15,677	---	8,099	3.70	300	126,967	4,699	5,304,899
1966-----	14,071	13,756	8,522	3.69	314	119,912	4,426	5,801,039
1968-----	12,832	12,571	9,135	3.67	335	117,225	4,305	6,206,150
1970-----	12,000	11,916	9,751	3.66	357	117,007	4,284	6,757,294
1972-----	11,700	11,630	10,259	3.67	377	120,025	4,410	7,361,435
1974-----	11,230	11,215	10,293	3.66	377	115,586	4,238	9,723,186
1976-----	11,032	11,003	10,894	3.66	399	120,180	4,402	11,706,043
1978-----	10,803	10,792	11,243	3.67	412	121,461	4,455	12,956,601
1980-----	10,810	10,862	11,889	3.65	434	128,525	4,692	16,890,254
1981-----	10,923	11,011	12,177	3.64	442	133,013	4,827	18,398,974
1982-----	11,026	---	12,316	3.64	448	135,795	---	---

¹ Data through 1959 obtained from Statistical Bulletin 303, Economic Research, 1962; for 1960 through 1964, from Agricultural Statistics, 1971, p.381; for 1965 through 1969, from Statistical Bulletin 509, Statistical Research Service; for 1970 through 1974, from Statistical Bulletins 589 and 591, Economics, Statistics, and Cooperatives Service (ESCS, USDA); and for 1975 through 1978, from Statistical Bulletin 651, ESCS. Preliminary data for cow numbers and yield for 1979 through 1982 obtained from successive February issues of "Milk Production," ESCS; preliminary data for fat yield and total farm value of milk produced, from "Milk Production, Disposition, Income," published in May each year by ESCS. Final estimates are published at approximately 5-year intervals.

² Excludes data from Puerto Rico and Virgin Islands.

USDA SUMMARY OF 1982 U.S. GOAT HERD AVERAGES

By Gerald J. King and George R. Wiggans¹

State and national summaries of dairy goat herd averages for milk and fat yield have been computed by the U.S. Department of Agriculture. The averages are from herds that (1) were enrolled in official and nonofficial National Cooperative Dairy Herd Improvement Program plans during 1982, (2) had been on test for at least 365 days prior to their last sample day on or before December 31, 1982, and (3) had does that averaged more than 40 percent days in milk and more than 500 pounds of milk. The percent days in milk is a measure of the proportion of the herd milking and can be affected by reproductive problems, herd turnover rate, and length of dry periods.

Data in table 1 show 12,001.1 doe-years (total days on test for all does divided by 365 days) in 1,054 herds for 1982. Nationally the average yield on a doe-year basis was 1,740 pounds of milk and 66 pounds of fat. Since the 1981 test year, the number of herds increased by 16, and the number of doe-years increased by 1,316.9.² The average number of doe-years per herd was 11.4, up 1.1 since the 1981 test year. The increases over the 1981 test year's yield averages were 25 pounds of milk and 1 pound of fat. For the 291 herds (2,663.6 doe-years) that were enrolled in protein testing, average protein yield was 55 pounds.

The average yield by breed is in table 2. Of the five major breeds, Saanens had the highest milk yield as in the 2 previous years, and Nubians had the highest fat yield. Table 3 shows the distribution of herds by milk yield. Twenty-one herds had milk yields above 3,000 pounds. The highest average milk yield was 3,955 pounds by a Nubian herd. The distribution of herds by fat yield is in table 4. The highest fat yield was 289 pounds, also by a Nubian herd.

Table 5 presents the distribution of herds by doe-years per herd. Most dairy goat herds were small; over 68 percent had 10 or fewer doe-years per herd. The most common herd size was 5.1 to 10 doe-years per herd, and the largest total number of doe-years occurred in herds of that size. The 24 herds with more than 50 doe-years per herd (2.3 percent) had 19.6 percent of the doe-years. The largest herd had 294.2 doe-years.

Table 6 gives the distribution of herds by percent days in milk. Almost 68 percent of the herds had between 71 and 90 percent days in milk.

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² King, G. J., and Wiggans, G. R. USDA summary of 1981 U.S. goat herd averages. U.S. Dept. Agr. Dairy Herd Impr. Ltr. 59(1), pp. 19-21. 1983.

Table 1.--State and national doe-year totals and averages for 1982

State ¹	Records with milk and fat						Records with protein			
	Herds	Doe-years	Doe-years per herd	Milk	Fat	Fat	Herds	Doe-years	Protein	Protein
	Number	Number	Number	Pounds	Percent	Pounds	Number	Number	Percent	Pounds
Alabama-----	6	36.6	6.1	1,261	5.00	63	4	28.1	3.44	41
Alaska-----	---	---	---	---	---	---	---	---	---	---
Arizona-----	38	334.8	8.8	1,623	3.75	61	---	---	---	---
Arkansas-----	11	316.5	28.8	1,321	3.66	48	1	47.6	2.92	38
California-----	204	3,475.2	17.0	1,928	3.75	72	4	44.3	3.23	75
Colorado-----	35	181.9	5.2	1,907	3.84	73	21	124.1	3.38	65
Connecticut-----	15	121.8	8.1	1,885	3.84	72	---	---	---	---
Delaware-----	2	14.2	7.1	1,681	4.55	76	---	---	---	---
Florida-----	15	96.8	6.5	1,326	3.85	51	10	46.5	3.10	39
Georgia-----	14	96.3	6.9	1,542	3.98	61	3	31.2	2.95	51
Hawaii-----	---	---	---	---	---	---	---	---	---	---
Idaho-----	16	114.0	7.1	2,053	3.86	79	4	26.9	3.09	65
Illinois-----	13	147.0	11.3	1,904	3.58	68	---	---	---	---
Indiana-----	8	64.7	8.1	1,746	3.41	59	5	37.5	2.81	47
Iowa-----	9	74.3	8.3	1,674	3.49	58	---	---	---	---
Kansas-----	24	127.1	5.3	1,537	4.03	62	---	---	---	---
Kentucky-----	1	18.9	18.9	2,107	3.75	79	---	---	---	---
Louisiana-----	5	45.0	9.0	1,700	4.39	75	---	---	---	---
Maine-----	38	270.0	7.1	1,659	3.70	61	8	45.2	3.24	52
Maryland-----	26	581.0	22.3	1,993	3.48	69	---	---	---	---
Massachusetts----	6	36.2	6.0	1,767	3.82	67	---	---	---	---
Michigan-----	35	268.0	7.7	1,644	3.95	65	6	37.0	3.29	46
Minnesota-----	12	172.9	14.4	1,907	3.61	69	---	---	---	---
Mississippi-----	---	---	---	---	---	---	---	---	---	---
Missouri-----	17	214.8	12.6	1,670	3.81	64	---	---	---	---
Montana-----	8	59.3	7.4	1,752	3.64	64	---	---	---	---
Nebraska-----	1	7.2	7.2	1,456	3.50	51	---	---	---	---
Nevada-----	12	101.8	8.5	1,665	3.67	61	---	---	---	---
New Hampshire----	16	123.0	7.7	1,792	3.52	63	---	---	---	---
New Jersey-----	27	276.4	10.2	1,567	3.56	56	27	276.4	3.04	48
New Mexico-----	9	98.7	11.0	1,896	3.48	66	---	---	---	---
New York-----	70	517.9	7.4	1,726	3.87	67	70	517.9	3.19	55
North Carolina---	5	45.1	9.0	1,568	4.28	67	2	10.8	3.02	55
North Dakota----	1	11.7	11.7	1,441	3.96	57	---	---	---	---
Ohio-----	45	367.8	8.2	1,592	4.07	65	20	189.7	3.21	52
Oklahoma-----	12	120.7	10.1	1,784	3.45	62	---	---	---	---
Oregon-----	116	1,259.7	10.9	1,686	3.91	66	37	465.4	3.48	60
Pennsylvania-----	9	156.7	17.4	1,670	3.87	65	---	---	---	---
Puerto Rico-----	1	146.8	146.8	792	2.90	23	---	---	---	---
Rhode Island-----	6	55.0	9.2	1,457	3.56	52	---	---	---	---
South Carolina----	3	11.6	3.9	1,728	3.66	63	---	---	---	---
South Dakota-----	---	---	---	---	---	---	---	---	---	---
Tennessee-----	19	142.5	7.5	1,985	3.60	72	---	---	---	---
Texas-----	25	287.1	11.5	1,537	4.05	62	23	268.2	3.44	54
Utah-----	4	25.1	6.3	1,737	4.01	70	3	21.3	3.06	51
Vermont-----	4	63.3	15.8	1,599	3.46	55	2	45.3	3.06	42
Virginia-----	18	238.2	13.2	1,465	4.08	60	---	---	---	---
Washington-----	48	409.9	8.5	1,773	4.01	71	28	260.2	3.25	60
West Virginia-----	4	41.8	10.4	1,677	3.25	54	---	---	---	---
Wisconsin-----	38	589.1	15.5	1,451	3.68	53	12	132.8	3.08	51
Wyoming-----	3	36.7	12.2	1,591	4.67	74	1	7.2	3.64	46
United States-----	1,054	12,001.1	11.4	1,740	3.78	66	291	2,663.6	3.25	55

¹ Includes Puerto Rico.

Table 2.--Average milk and fat yield by breed, 1982

Breed	Records with milk and fat						Records with protein			
	Herds	Doe-years	Doe-years per herd	Milk	Fat	Fat	Herds	Doe-years	Protein	Protein
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Pounds</i>	<i>Percent</i>	<i>Pounds</i>	<i>Number</i>	<i>Number</i>	<i>Percent</i>	<i>Pounds</i>
Alpine-----	201	1,781.2	8.9	1,835	3.61	66	66	560.9	3.09	57
Experimental ----	5	33.6	6.7	1,611	4.32	70	3	19.4	3.35	58
LaMancha-----	36	308.7	8.6	1,721	3.75	65	9	81.2	3.44	52
Nubian-----	316	2,717.1	8.6	1,536	4.45	68	87	694.8	3.68	56
Saanen-----	83	649.8	7.8	1,934	3.43	66	24	190.6	3.18	54
Toggenburg-----	97	946.4	9.8	1,892	3.45	65	37	396.1	3.01	55
Mixed ¹ -----	316	5,564.3	17.6	1,763	3.65	64	65	720.6	3.16	52
All breeds-----	1,054	12,001.1	11.4	1,740	3.78	66	291	2,663.6	3.25	55

¹ Includes herds with breed not reported.

Table 3.--Distribution of goat herds by milk yield, 1982

Milk (pounds)	Herds	Herds
	<i>Number</i>	<i>Percent</i>
501 - 1,000-----	50	4.8
1,001 - 1,500-----	281	26.7
1,501 - 2,000-----	417	39.6
2,001 - 2,500-----	216	20.5
2,501 - 3,000-----	69	6.5
More than 3,000-----	21	2.0
Total-----	1,054	100.0

Table 4.--Distribution of goat herds by fat yield, 1982

Fat (pounds)	Herds	Herds
	<i>Number</i>	<i>Percent</i>
Less than 26-----	4	0.4
26 - 50-----	191	18.1
51 - 75-----	532	50.5
76 - 100-----	259	24.6
101 - 125-----	63	6.0
More than 125-----	5	.5
Total-----	1,054	100.0

Table 5.--Distribution of goat herds by doe-years per herd, 1982

Doe-years per herd (number)	Herds	Herds	Doe-years	Doe-years
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
Less than 5.1---	322	30.6	1,149.9	9.6
5.1 - 10.0---	396	37.6	2,887.9	24.1
10.1 - 15.0---	157	14.9	1,895.4	15.8
15.1 - 20.0---	70	6.6	1,212.4	10.1
20.1 - 25.0---	33	3.1	738.8	6.2
25.1 - 30.0---	20	1.9	547.9	4.6
30.1 - 35.0---	11	1.0	364.5	3.0
35.1 - 40.0---	11	1.0	418.6	3.5
40.1 - 45.0---	8	.8	335.0	2.8
45.1 - 50.0---	2	.2	95.7	.8
More than 50.0---	24	2.3	2,355.0	19.6
Total-----	1,054	100.0	12,001.1	100.0

Table 6.--Distribution of goat herds by percent days in milk, 1982

Days in milk (percent)	Herds	Herds
	<i>Number</i>	<i>Percent</i>
41 - 50-----	23	2.2
51 - 60-----	71	6.7
61 - 70-----	190	18.0
71 - 80-----	384	36.4
81 - 90-----	329	31.2
91 - 100-----	57	5.4
Total-----	1,054	100.0

CHANGES IN THE AIPL GENETIC EVALUATION PROCEDURES

By George R. Wiggans¹

Procedures for computing and distributing genetic evaluations are changed occasionally to improve the accuracy and enhance the usefulness of the evaluations. The following changes were implemented in recent genetic evaluation runs as a result of research at the Animal Improvement Programs Laboratory (AIPL).

January 1983

Goat buck evaluations were calculated by adapting procedures for best linear unbiased prediction to dairy goat records. All lactation records for each doe were used, and relationships among bucks were incorporated. Evaluations were based on 58,562 daughter records of 12,678 bucks of the Alpine, LaMancha, Nubian, Saanen, and Toggenburg breeds.

For dairy bull evaluations, daughter contemporary deviation for each daughter record was adjusted for genetic merit of contemporaries by using the Predicted Difference (PD) rather than the Modified Contemporary Deviation (MCD) for each contemporary's sire. This change previously had been incorporated in the summer 1982 Mexican evaluations. Using PD rather than MCD had relatively little effect on most Sire Summaries but caused a few evaluations to change more than they would have otherwise. Because of this change, a bull's evaluation should change less from run to run.

All lactation records that had less than 305 days in milk, including records with termination code 0 (cow went dry), were projected to 305 days. In the past, records with termination code 0 and less than 305 days in milk were not projected. Recent AIPL research indicated that projection of those records results in a measure of lactation yield with higher heritability and repeatability than when they are not projected.

A percentile ranking of active artificial-insemination (AI) bulls for PD dollars (PD\$) was added to the Active AI Sire Summary and the format-380 tape. The percentile ranking is based on active AI bulls and indicates the percentage of active AI bulls that the evaluation of a given bull exceeds. The highest percentile is 99 and the lowest is 0.

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Elite cow records on the Cow Index tapes were designated by a letter "E" on distribution tapes so that the Elite designation could be forwarded to the owners along with the Cow Indexes. The top 10-percent Cow Index tape provided to AI organizations was changed to format 105 to provide additional information.

Edit limits for all breeds were changed to 200 pounds per day for maximum actual milk yield and 10 pounds per day for maximum actual fat yield. Edit limits for minimum actual daily yields were not changed. All edits for maximum and minimum lactation milk and fat yields were eliminated.

July 1983

The Complete USDA-DHIA Sire Summary was distributed only on 48X-reduction microfiche. This medium reduces the effort of printing and distributing the Sire Summary. The PD's for yield of solids-not-fat (SNF) and protein were computed in addition to percentages. These data were included on the format-380 tape, and lists were distributed to AI organizations and State Extension Dairy Specialists. Identification edits for Red and Whites were revised to allow information from grade animals to be included in evaluations. The edits now are the same as for other breeds.

The method of calculating the contribution of ancestor merit to PD was changed. The average daughter merit of bulls with similar pedigree indexes was replaced by a function of pedigree index to represent ancestor merit. This estimate of ancestor merit is affected by birth date and type of sampling program. This procedure simplifies computations and improves the accuracy of evaluations. A similar change was made for the summer 1983 Mexican evaluations. However, birth date and type of sampling were not considered. Bulls without sire and maternal grandsire evaluations were grouped by country of origin.

The grouping procedure also was changed for protein and SNF evaluations. Groups were based on ancestor merit for milk yield. Ancestor information also was incorporated into sire evaluations for protein and SNF through a relationship matrix.